JOURNAL

of the

NATIONAL ASSOCIATION *of* CHIROPODISTS

ANNUAL MEETING
WASHINGTON, D. C.
AUGUST 22-26, 1958

The Official Publication of the Profession

Leucocytes

Clubfoot Splints

Lateral Nail Surgery

Body Weight Support

Table of Contents—Page A6

VOLUME 47, NUMBER 10

OCTOBER, 1957

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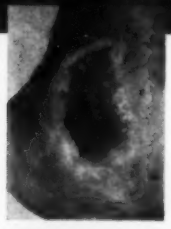

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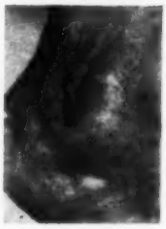

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1. Kline, P. R., and Caldwell, A.: New York St. J. M. May 1, 1952.
2. Combes, F. C., and Zuckerman, R. J. Invest. Dermat. 16:379, 1951.
3. Kline, P. R.: Current News in Derm. & Syph., May 1952.

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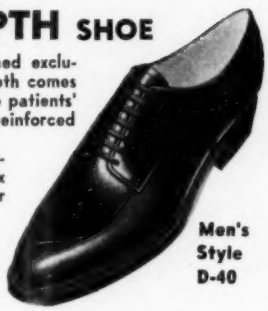

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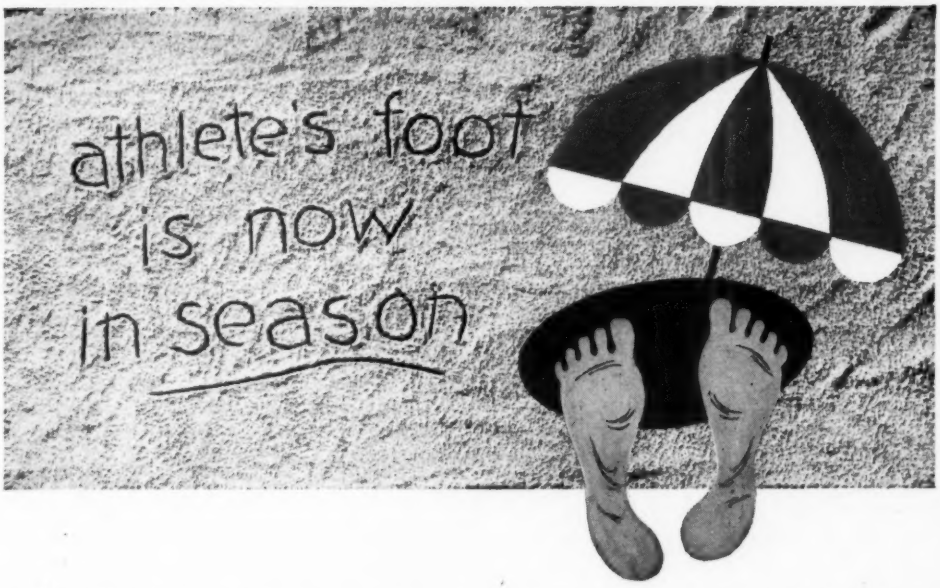

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TABLE OF CONTENTS

Page No.

A Definite Surgical Treatment for Some Lateral Nail Problems 493
LAWRENCE FROST, D.S.C., F.A.C.F.S.

The Support of Body Weight by the Feet 498
E. S. BURGER, A.A., D.S.C., F.A.C.F.O.

Yale Clubfoot Splint 505
IRVING YALE, D.S.C., F.A.S.C.R.

The Leucocyte Differential as an Aid to Diagnosis in Chiropody 507
NANCY LU CONRAD, M.T., (ASCP), B.S., D.S.C.

Comminuted Fracture of Fifth Metatarsal 509
WILLARD W. FINE, D.S.C., F.A.A.C., F.A.C.F.S.

Page No.

Placidyl in Preoperative and Postoperative Sedation 511
SEYMOUR H. BLAU, D.S.C.

President's Message 512

Editorial 513

Washington Report 514

Techniques in Foot Surgery 516

The Podopediatric Clinic 518

Pharmaceutical Preparations for the Profession 521

Abstracts from the Chiropody Literature 524

Book Review 525

Digests from the Literature 526

Organization News A19

Convention Dates and Meeting Notices A26

Communication from the Profession A27

Legal and Legislative A28

Mood Elevators A29

Advertisers Index A32

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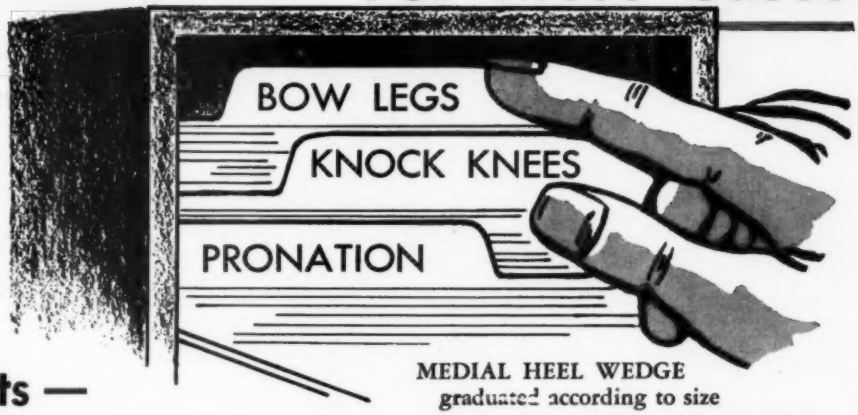

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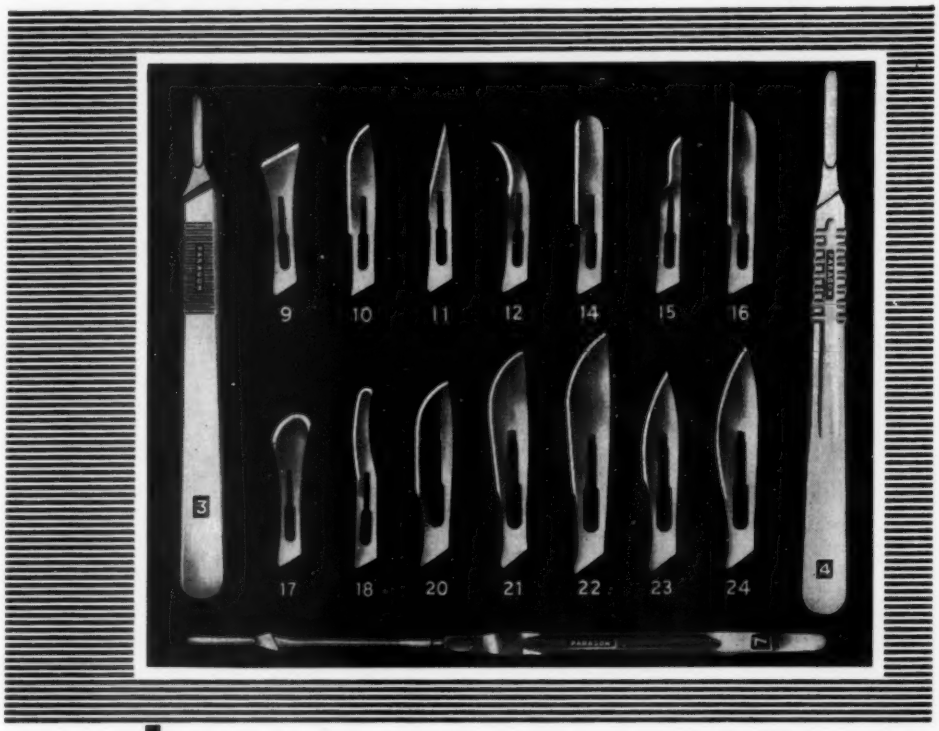

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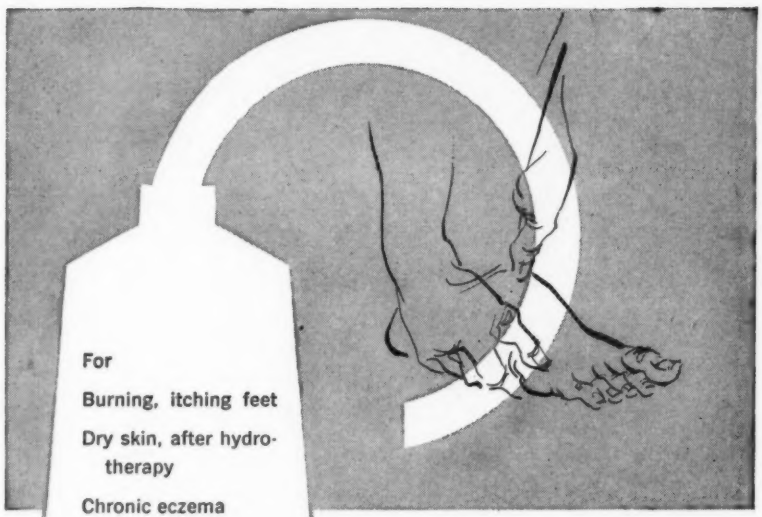

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[1]Ignatoff, W. R., Journal National Assn. Chiropodists, December 1952

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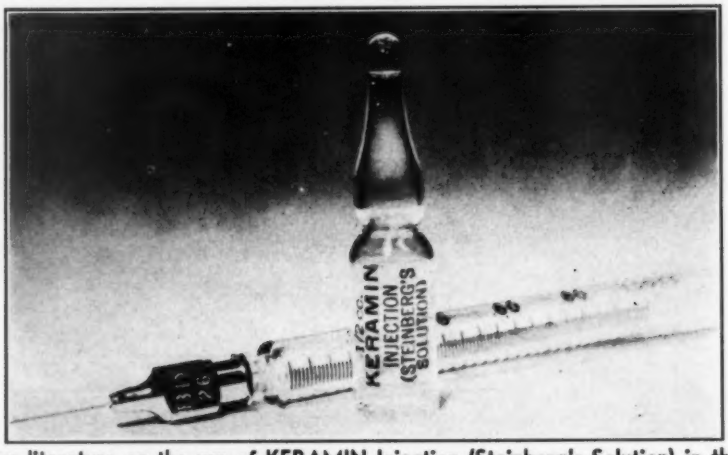

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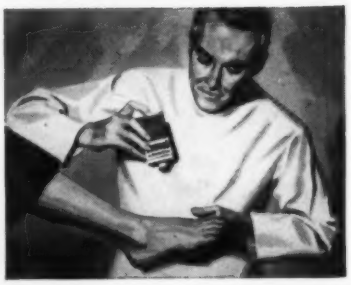

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VOLUME 47 OCTOBER, 1957 NUMBER 10

A DEFINITE SURGICAL TREATMENT FOR SOME LATERAL NAIL PROBLEMS*

LAWRENCE FROST, D.S.C., F.A.C.F.S.
Monroe, Mich.

LATERAL nail problems inherently belong in the chiropodial sphere of practice. Of these lateral nail problems, the incurvated nail has received our greatest attention. Many solutions have been offered by the various professions but not without various drawbacks, the major one being that of recurrence. In some articles fabulous series of cases have been reported operated upon in a relatively short time, yet there has been a percentage of recurrences. Usually they were technics in which the operator worked blindly. One may be certain that the recurrences were incurvated nails.

It is the conviction of the writer that good surgery is facilitated by visibility within the area surgically manipulated. Circumstances ofttimes necessitate working blindly or by a sense of feel. This is not necessary in lateral nail problems.

Types of Lateral Nail Problems

In the past the indiscriminate use of one surgical procedure on all lateral nail problems may have seemed necessary. Today it is ill-advised. A consideration of these problems with the purpose of using a treatment that is specific should predominate the thinking of the practitioner. To facilitate arriving at a specific treatment the lateral nail problems have been categorized. Commonly called "ingrown nails" or "onychocryptosis" in the past, I have divided these into three types to aid in determining the treatment.[11]

1. Ingrown nail or onychocryptosis—any nail plate that has a spur or fish-hook on one or both lateral edges.

2. Hypertrophic ungualabia [2,3,4] or nail lip hypertrophy—an hypertrophy of the labia of a nail plate.

3. Incurvated nail [5,6] — any nail plate that has an increase in its arc at one or both sides.

A lateral nail problem may be a combination of any two of these types, or all three, ofttimes accompanied by a paronychia and hyper-granulation tissue.

Treatment

1. The ingrown nail is treated in the traditional manner.

2. The hypertrophic ungualabia, if it is not associated with an incurvated nail, is treated by a plastic reduction of the lip. Best results are obtained by excising a wedge-shaped section of the lip. If accompanied by an incurvated nail its reduction is easily accomplished by the nail root resection.

*An award winning paper in the 1957 William J. Stickel Annual Awards for Research in Chiropody. Presented at N.A.C. annual meeting, Chicago, August 1957.

3. The incurvated nail is corrected by a nail root resection which is redescribed for purposes of clarification, since previous descriptions have had a tendency to be somewhat confusing.

Details of the Nail Root Resection

1. Following the longitudinal striations in the nail, for they indicate the direction of the nail growth, split the nail for its entire length with a nail splitter or nail forceps. This should be just at, or within,

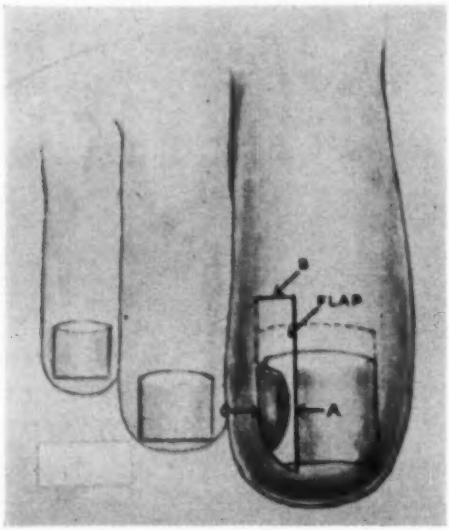

Fig. 1 – Incision is an inverted "L" carried down to but not into the phalanx.

the point where the nail arc begins its incurvation, and usually is about 1/16″ from the lateral edge of the nail. Using the split in the nail as a guide place your scalpel blade in it and make a vertical incision down to, but not in to, the phalanx for the entire length of the nail, and beyond either end for 1/32″ (see A – Figs. 1 and 2).

2. Make the second incision (see *B* – Figs. 1 and 3) at the proximal end of the first incision going through the skin but not into the adipose tissue. Carry it at right angles to the first incision and away from the nail. It will vary in length from 2/8″ to 3/8″. This area within the angle is then underscored to make a flap thick enough to maintain ample circulation in it. Try to keep between the yellow adipose

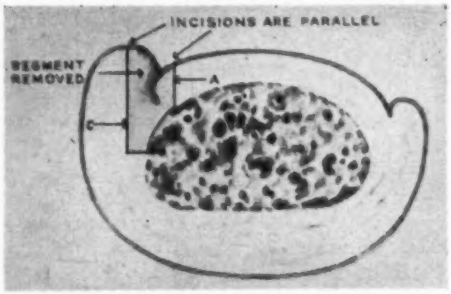

Fig. 2–Cross section, Anterior to "B."

tissue and the skin flap above. If there are any white, glistening fibres on the under surface of the flap grasp them with a mosquito hemostat and dissect them free with a scalpel for these well might be root fibres and the source of a recurrence. A skin hook or Allis clamp may be fastened to this flap and allowed to suspend downward, thus acting as a weighted retractor.

3. A third incision is made parallel to the first (see *C* – Figs. 1, 2 and 3) but about 1/32″ external to the nail edge. It should be vertical and of the same depth as the first incision. Starting in the area exposed by the displacement of the skin flap it should continue toward the distal end of the toe. When having been carried ¾ the length of the nail it is turned in gradually to meet the first incision at the same time lessened in depth. Grasping the intervening tissue at this point an incision is made into it toward the phalanx. Retaining your grasp on this intervening tissue, for it is the segment of nail, nail bed and root we wish to excise, the tips of a pair of Sistrunk scissors are used to dissect it free from the phalanx. We will find that the proximal portion of the segment will thin out to an edge because of the curve of the base of the phalange superiorly.

Once the segment is free closely inspect the cavity for glistening, white fibers for all should be carefully excised. The flap is then repositioned and the tourniquet is removed. A clot will form in about five minutes. If the patient is slow to clot a sliver of Gelfoam®[1] may be inserted under the flap. This is not done routinely for this clot is not as readily absorbed as a natural one and delays healing.

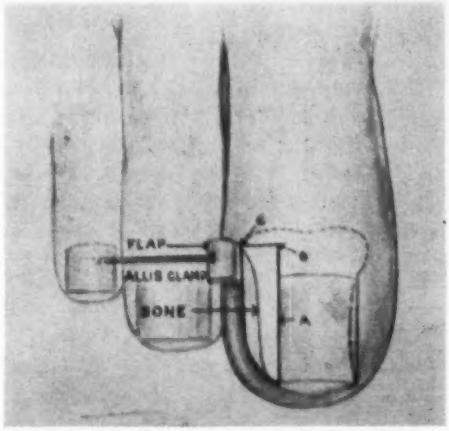

Fig. 3 — Skin flap does not include nail root.

A half portion of Telfa®[2] is placed over the wound, and over this is placed about three 2 x 2 flat sponges. A one inch roller bandage is carefully but firmly applied around the toe in the area of the flap and then the toe is bandaged in the uniform manner.

Postoperative Care

The first redressing takes place at the end of either 24 or 48 hours and consists of a dry dressing without medication. Redressings are done at five-day intervals thereafter.

In the event of a postoperative infection I would advocate an evaporating wet dressing. Having a personal preference for Azo-choloramid®[3], I use one tablet to one ounce of distilled water, the frequency of application being once every 3 or 4 hours. Redressings are then made as often as the condition warrants.

Between 10th and 14th days it is well to remove the coagulum with a convex cutting forceps, for, because of its hard, rubbery consistency, it fails to be resilient enough. Consequently it tends to create pressure inferiorly and cause some serum to form under it which could become infected. The coagulum peels out quite readily. Should there be some serum present, apply a spatula full of penicillin G crystals on the denuded area and cover with a band-aid (Need I caution you to first inquire as to any previous penicillin sensitivity.)

An occasional patient will have a hard segment of callous form in the new sulcus several months following the surgery. They can, by thinking it is a recurrence, get quite excited. And so can you. Warn them of the possibility and suggest that they return to you in the event of such an eventuality and you will remove the callous. Should it be necessary to do so have the patient follow up with the daily application of an emollient for several weeks.

Observations and Variations

As indicated in my original paper on the subject[5], it has been observed that tinea unguium is one of the causes of the incurvated nail. With the increasing prevalence of this disease among women since the advent of the open toe shoe, an increase of incurvated nails amongst women is quite evident. In my experience the treatment of the nail disease does not correct the incurvated nail though it is advisable to do so before surgical intervention to get the area as germ-free as possible. Once surgery is decided upon it is wise to consider an avulsion of the nail where tinea still is present, prescribing postoperative application of a fungicide in an emollient base.

Ofttimes, following the excision of a subungual exostosis, where the neoplasm

®[1] The Upjohn Co.
®[2] Bauer & Black
®[3] Wallace & Tiernan

has developed more on one side than centerwise, there tends to be some postoperative collapse of the subungual tissues on that side and a resulting incurvation of the nail. This may be circumvented by first doing a nail root resection on that side and then completing the exostosectomy since the exostosis is half exposed. By lengthening the original incision at its distal end one has ready access to the problem. Sutures may be used in the distal end without the fear of suture tension problems you would have at the proximal end.

When it is necessary to remove a central subungual exostosis and jointly perform a nail root resection on both sides of the same toe, do the root resections first. Join the two areas by making an incision in the distal tip to join the first two, as in a fishmouth incision, then free the superior structures from the exostosis. Sutures may be used at the tip of the toes.

Should there be an hypertrophy of the distal dorsal tip of the toe associated with the incurvated nail it is a simple matter to lengthen the distal end of the incision carrying it around the tip of the toe as in a fish-mouth incision. Another incision should be made either inferior or superior to it and join it at its ends to form a wedge, which should be excised, as in the plastic reduction of an hypertrophied lip. The edges are then drawn together and coaptated with dermal sutures.

Curettage should never be done on the nail root for there is too much chance that regenerative cells may be allowed to remain. Sharp dissection is always indicated in this area.

Nail root resection tends to be unsuccessful on an onychauxis. On the thickened incurvated nail it is wiser to excise the nail root in its entirety.

Since the publication of my first article on this technique I have been privileged to answer question and letters from hundreds of chiropodists in and out of this country. These questions were repetitively similar in the majority of cases.

The lateral nail problem is one of the paramount problems in our profession. The eagerness with which questions have been asked are evidence of the need for a reliable procedure. The procedure described has stood the test of time for there is no question it has been used thousand of times. In my own experience there have been 394 lateral nail operations with but one recurrence. In that instance I erred by not taking a wide enough root segment from the patient. Reoperated, it was made eminently successful.

TABLE I

	Frost	Rubin
Men	30%	44%
Women	70%	56%
Number of patients	100	100
TYPE I		
Ingrown Nails	32%	24%
Ingrown Nails with Paronychia	6%	4%
Number of Ingrown Nails	38%	28%
TYPE II		
Hypertrophic Ungualabia	1%	10%
Hypertrophic Ungualabia with Paronychia	0%	2%
Hypertrophic Ungualabia undergoing surgery	0%	1%
Number of Hypertrophied Nail Lips	1%	13%
TYPE III		
Incurvated Nails	54%	56%
Incurvated Nails with Paronychia	2%	1%
Incurvated Nails undergoing Root Resection	5%	2%
Number of Incurvated Nails	61%	59%

Incidence of Lateral Nail Problems

With the cooperation of Dr. Abe Rubin while he was Director of Clinics at the Illinois College of Chiropody and Foot Sur-

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Certain tentative conclusions may be drawn:

1. Over 50% of all lateral nail problems requiring treatment in either the clinic or the office are in the incurvated nail classification.

2. Yet about 8¼% of the Frost series of incurvated nails were operated upon, and about 3½% of the Rubin series. In both instances it was thought unnecessary to operate upon but a minority.

3. The Winograd[9,10] technique seems to be the most commonly used nail root surgery heretofore. In his reported series Winograd used his technique on 20 cases; he had three recurrences, or 15 per cent. Since he referred to all of his cases as "ingrown toenails" it is safe to assume that this diagnostic term was applied to all of the three types previously referred to. Your guess is as good as anyone's as to which of these types were the three that recurred.

Summary

1. It has been determined that every lateral nail problem is not necessarily a case for surgical intervention. Though an average of 60% are incurvated nails, less than 10% of these demand operation.
2. Certain variations in the original technic have been described.
3. Certain changes have been introduced in the postoperative care that alleviate its major problems.
4. An accepted group of terms and a diagnostic division into types is outlined.

Kresge Building

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11. The American College of Foot Surgeons approved and adopted these lateral nail classifications and terms for diagnosis about five years ago.

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has developed more on one side than centerwise, there tends to be some postoperative collapse of the subungual tissues on that side and a resulting incurvation of the nail. This may be circumvented by first doing a nail root resection on that side and then completing the exostosectomy since the exostosis is half exposed. By lengthening the original incision at its distal end one has ready access to the problem. Sutures may be used in the distal end without the fear of suture tension problems you would have at the proximal end.

When it is necessary to remove a central subungual exostosis and jointly perform a nail root resection on both sides of the same toe, do the root resections first. Join the two areas by making an incision in the distal tip to join the first two, as in a fishmouth incision, then free the superior structures from the exostosis. Sutures may be used at the tip of the toes.

Should there be an hypertrophy of the distal dorsal tip of the toe associated with the incurvated nail it is a simple matter to lengthen the distal end of the incision carrying it around the tip of the toe as in a fish-mouth incision. Another incision should be made either inferior or superior to it and join it at its ends to form a wedge, which should be excised, as in the plastic reduction of an hypertrophied lip. The edges are then drawn together and coaptated with dermal sutures.

Curettage should never be done on the nail root for there is too much chance that regenerative cells may be allowed to remain. Sharp dissection is always indicated in this area.

Nail root resection tends to be unsuccessful on an onychauxis. On the thickened incurvated nail it is wiser to excise the nail root in its entirety.

Since the publication of my first article on this technique I have been privileged to answer question and letters from hundreds of chiropodists in and out of this country. These questions were repetitively similar in the majority of cases.

The lateral nail problem is one of the paramount problems in our profession. The eagerness with which questions have been asked are evidence of the need for a reliable procedure. The procedure described has stood the test of time for there is no question it has been used thousand of times. In my own experience there have been 394 lateral nail operations with but one recurrence. In that instance I erred by not taking a wide enough root segment from the patient. Reoperated, it was made eminently successful.

TABLE I

	Frost	Rubin
Men	30%	44%
Women	70%	56%
Number of patients	100	100
TYPE I		
Ingrown Nails	32%	24%
Ingrown Nails with Paronychia	6%	4%
Number of Ingrown Nails	38%	28%
TYPE II		
Hypertrophic Ungualabia	1%	10%
Hypertrophic Ungualabia with Paronychia	0%	2%
Hypertrophic Ungualabia undergoing surgery	0%	1%
Number of Hypertrophied Nail Lips	1%	13%
TYPE III		
Incurvated Nails	54%	56%
Incurvated Nails with Paronychia	2%	1%
Incurvated Nails undergoing Root Resection	5%	2%
Number of Incurvated Nails	61%	59%

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THE SUPPORT OF BODY WEIGHT BY THE FEET†

E. S. BURGER, A.A., D.S.C., F.A.C.F.O.*
Chicago, Ill.

In the practice of orthopedics in our field of chiropody and podiatry, it is well to know the physics involved in the two main divisions, namely, the physics of statics, and the physics of dynamics, as applied to the foot and body.

The physics of statics can be subdivided into two branches: one, the physics of normal statics of the foot and body, and two, the static faults of the foot and body. In the normal statics, there are no disturbances in the skeletal and muscular factors; in the static faults there may be muscular or skeletal faults or both.

Briefly, in normal statics, we are concerned with the normal static function of the foot and body and the relationship of each other in the static state. In static faults we are concerned with the deviations or faults of the muscular or skeletal factors or both, as they may be observed in comparison to normal statics. The static faults manifest their effects in the dynamic function of the foot and body, and their relationship.

The physics of dynamics can also be subdivided into two branches: one, the normal dynamics of the foot and body, and two, the dynamic faults of the foot and body.

In normal dynamics we are concerned with the study of body movements or kinesiology (human motor dynamics) of the foot and body without pathology.

In the physics of dynamic faults, we are concerned with the faulty relationship of the foot and body as influenced by static faults or muscular factors, or both. This is with pathology.

The pathomechanics of many orthopedic conditions involves the physics of static faults, dynamic faults, muscular factors or all three.

Before the physics of static faults, normal dynamic physics, and dynamic faults can be understood thoroughly, it is necessary to understand the fundamentals of normal statics. It is the purpose of this lecture to present some of the fundamentals and only a few references will be made to the physics of dynamics and muscular factors.

It is a common experience that objects fall earthward. This falling force is called force due to gravity (pull of gravity) which originates in the mutual attraction of the object and earth. The weight of an object is the force that acts on the object due to its presence in the earth's gravitational field. The gravitational attraction of the earth for all bodies near or far acts as if the mass of the earth were all concentrated at its center.

All terrestrial bodies are subject to the law of gravity and to gravitational force. We, being terrestrial bodies and destined to walk or stand on solid state media, are subject to these laws and forces. A law of statics states that any force, if applied to a body, can be resolved in a translatory force and a so-called couple of rotating forces arranged so that a line connecting their points of application goes through the so-called center of gravity.

This center of gravity represents the one mass point of the body which is so situated that the gravitational force for all other mass points of the body can be imagined to go through it.[2]

In the upright position of the body, the center of gravity is located at the level of the second sacral vertebra, about 5 cm be-

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hind the common hip joint axis and the line of gravity touches the floor 3 cm to 4 cm in front of the ankle joint.[3]

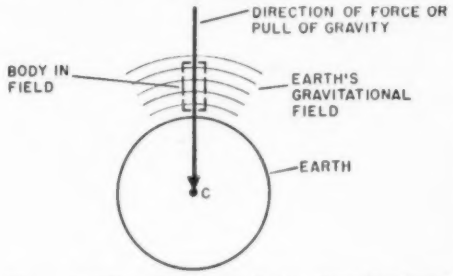

Fig. 1—The Earth and its Gravitational Field

In figure 1, we have an illustration of the earth, the earth's gravitational field, the direction of the pull of gravity toward the center, C, and the body or object in the earth's gravitational field.[1]

The human body, in stance and locomotion, is subject to laws of mechanics, as applied to general mechanics. The laws which apply are the three Newtonian Laws as follows.[2,3]

First Law: A body is in equilibrium if no free force is acting upon it. If at rest, it remains at rest; if it is in uniform motion, it continues in uniform motion.

Second Law: A body is in equilibrium if all forces acting upon it mutually neutralize each other both in intensity and direction so that the resulting force is zero.

Third Law: If a force meets with a resistance, a counterforce or reaction is created, opposite in direction to the primary force; furthermore, if both forces are equal and opposite, they will neutralize each other so that the resultant force will be zero, and the body will be in equilibrium as though no force were operative on it.

Thus, for the Third Newtonian Law, we must have: 1. A primary force. 2. A resistance (the earth). 3. A counterforce or reaction opposite and equal to the primary force. 4. Both forces, if equal and opposite, will neutralize each other. 5. The resultant will be zero.

The balance of the human body or its parts requires that all gravitational forces be completely neutralized. These counterforces for neutralizing the gravitational forces are supplied by the resistance of the supporting surface on which the body stands. As long as all gravitational forces fall into and are intercepted by such supporting surfaces, the translatory force of gravity is neutralized.

In order to neutralize the rotatory forces, it is necessary that the line of gravity go through the center of gravity, and the line of gravity must strike the supporting surface and not fall outside of the base.

As long as all partial forces of gravity will apply in the center of gravity and the center of gravity falls directly on the supporting surface, then the body is balanced.

Two factors are important in stability. One, the wider the supporting area, the greater the force to destroy balance by throwing the line of gravity beyond the supporting surface; two, the lower the center of gravity, the greater is the arc which an unbalancing force must describe before the center of gravity will fall outside of the supporting surface. The supporting surface can be tilted and as long as the center of gravity and the line of gravity remain within the supporting base, the body will be stable.[2,3]

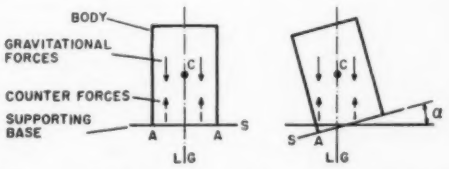

Fig. 2—Stability of the Vertical and Tilted Body

Figure 2 illustrates a vertical and tilted body. The illustration on the left shows the body on a horizontal supporting sur-

face or base, the center of gravity, the line of gravity, the gravitational forces, and the counter forces which neutralize the gravitational forces. The illustration on the right shows the body on a tilted base.

Body weight or force concentration is manifested at the contact area of the body with its supporting surface. The weight of an object is the force that acts on an object due to its presence in the earth's gravitational field. The increase in body weight increases the weight or force concentration at the contact area with the supporting surface. The total body weight forces are concentrated in finite sections at the contact area with the surface of the supporting area or base.[4]

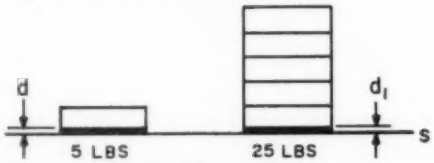

Fig. 3—Body Weight or Force Concentration

Figure 3 shows two examples of body weight or force concentration. In the left illustration we have a small body of 5 pounds weight. The forces are concentrated in small dark finite sections "d." If body weight is increased, force concentration is increased as shown in the right illustration. The body weight is increased five times, or a total of 25 pounds and the force concentration is in the small dark finite section "d_1".

We now consider the foot as a support of body weight. Usually the foot is defined as that portion of the lower extremity located below the ankle, whose function is to serve as a supporting base in standing (passive state) as well as lever in locomotion (active state). In standing, the gravitational forces are completely dominant, while muscle action is reduced.[5]

Since we are considering the foot as that part from the ankle to the forefoot, ankle to the rearfoot, and forefoot to the rearfoot, which presents a triangular form, then we must give consideration to the body from the ankle upward, which is being supported by the foot.

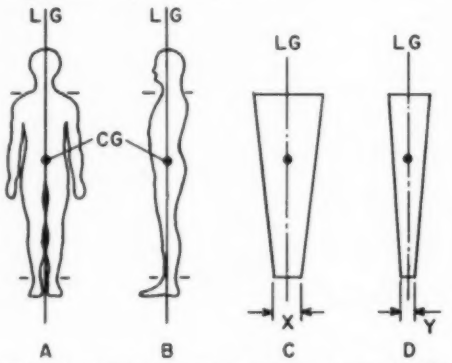

Fig. 4—Body Shape Factors from Ankle Line to Shoulder Line

In figure 4, we have the anterior aspect of the body, A, and the lateral aspect, B. The center of gravity, CG, and the line of gravity, LG, are indicated. Examining the anterior aspect from the ankle line to the shoulders, we can observe a large wedge shaped area as shown by C, with the narrow base or wedge at the bottom. This presents a large or wide base at the shoulder line and a narrow or wedge base at the ankle line, X. However, since the legs can be moved or spread laterally, the stability of the body can be aided. Observing the lateral aspect of the body as shown as B, we have a wedge-shaped area which is much smaller than the wedge shape observed at the anterior aspect. Here we have a smaller base at the shoulders and a very narrow base or wedge at the ankles as shown by Y in illustration D. This very narrow base Y cannot maintain stability in the anterior-posterior directions. With the center of gravity high and very narrow supporting base, stability will be poor. It is here that we now consider the function of the feet as supports of the body, from the ankle up.

A support is that part of a structure which is used to hold up, or in position, to bear weight or stress, to keep from falling or sinking, and to sustain a load.

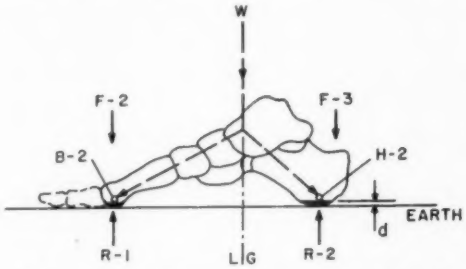

Fig. 5—The Foot as a Support of Body Weight

We now examine figure 5. The body weight forces are transmitted vertically downward to the foot through the ankle, forward to the anterior or ball area (metatarsal) B-2, to the rear foot or heel, H-2. The line of gravity LG passes downward and divides the supporting area, B-2 to H-2, into relative areas.

The total body weight forces are concentrated in finite sections of bone "d," as shown by the dark sections at B-2, H-2. These finite sections are in very close contact with the earth.[4] It is here that these finite sections with the total weight concentration can be considered as part of the earth, and that the earth supports the body weight.[6,7,8]

Since the finite sections "d" can be considered as part of the earth, the foot acts as a support of the body weight from the upper limits of the finite sections as shown by the small circles at B-2 and H-2. The total body weight supported from these limits would be less the weight of the finite sections. Since the finite sections are of such small magnitude, their weight factors need not be considered.

The foot can be considered as comprising two pillars for support of body weight; one, the anterior pillar, and two, the posterior pillar. The supporting base for the foot is the distance from B-2 to H-2, and as long as the line of gravity LG remains within the limits of this supporting base, the foot will function as a support. As stated before, the body is subject to mechanical laws and in this case the Third Newtonian Law applies as follows.

The primary forces are F-2 at the ball, F-3 at the heel. The resistance is the earth, the reactions forces are R-1 at the ball, and R-2 at the heel. The primary forces, F-2 plus F-3 equal body weight, and the reaction forces, R-1 plus R-2 equal body weight. Since primary forces equal reaction forces and are equal and opposite, the resultant force is zero and the Third Newtonian Law applies.

$$F\text{-}2+F\text{-}3=W \qquad R\text{-}1+R\text{-}2=W$$
$$F\text{-}2+F\text{-}3=W=R\text{-}1+R\text{-}2$$

If the line of gravity, LG passes beyond the limits of the supporting base, the foot will not function as a support and the tendency would be to fall, unless the body was in locomotion.

In figure 6, the feet, acting as supports of the body, form a four point support, the

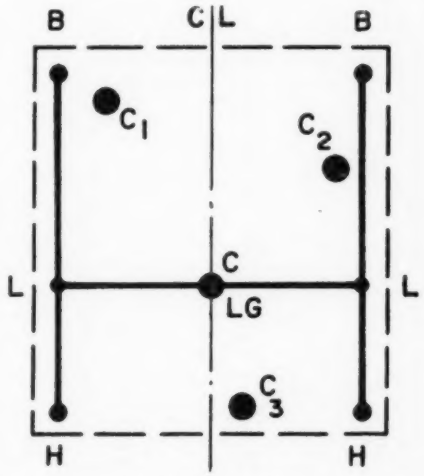

Fig. 6—The Feet as a Four Point Support of Body Weight

two anterior supports, B,B, (metatarsals) and the two posterior supports, H,H, (heels). The center of gravity is C, and the hip line and legs are L,L. The supporting base area is shown by the dash lines.[5]

Equilibrium will be maintained as long as the center of gravity remains within this area and the line of gravity passes through it. The center of gravity can move about within this area as shown by C1, C2, and C3. Should the center of gravity exceed the limits of the supporting base, equilibrium will be lost.

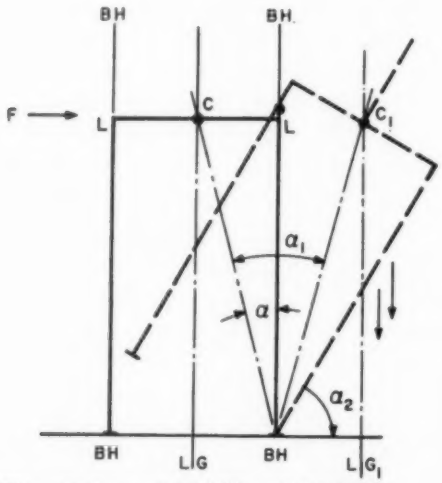

Fig. 7—Lateral Stability of the Body

Figure 7 illustrates the lateral stability of the body. This is an anterior aspect and the two feet are shown by BH, the legs and hips by L,L, and the center of gravity by C, and the line of gravity, LG. The leg and foot are shown in solid lines. The supporting base is from BH to BH.

If a force, F, is applied to the body and is of such magnitude that it can only move the center of gravity C to the position shown on the supporting base limit BH and through the angle *a*, the line of gravity LG is also moved to this limit BH. As long as it remains within the base area, the body is stable. Should force F be of such magnitude so that the center of gravity moves from C to C1 through angle a_1, and the line of gravity moves beyond the base limit to LG_1, the force of gravity acts on the body. There will be a rotation at BH as shown by the arc a_2, and the body will fall.[3]

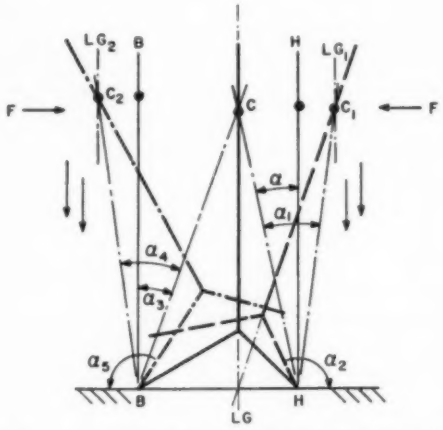

Fig. 8—Anterior-Posterior Stability of the Body

Figure 8 illustrates anterior-posterior stability of the body. B represents the forefeet and H the rear feet or heels. C is the center of gravity and LG represents the line of gravity. The supporting base area is from B to H. The body is shown in solid lines.

If a force F were applied to the anterior and if its magnitude were such that the center of gravity C moved to the posterior base limit H through the angle *a*, the line of gravity LG would be at the limit H and the body would be stable.

If the force F were of such magnitude to move the center of gravity C to C_1, through angle a_1, the line of gravity would move to LG_1, which is beyond the limit H of the supporting base and the pull of gravity would act on the body. There would be a rotation at H in the direction of the

arc a_2, and the body would fall. The same conditions would exist if a force were applied at the posterior.[3]

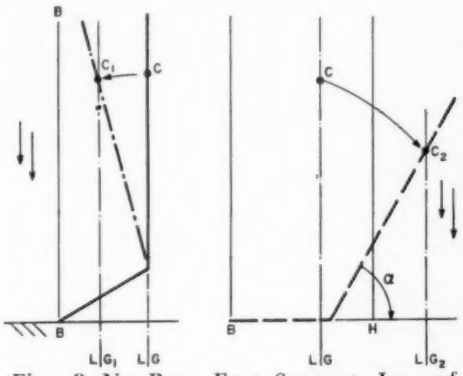

Fig. 9—No Rear Foot Support, Loss of Stability

Figure 9 represents a condition in which there are no rear foot supports (no heels). In the left illustration the solid line represents the body without the rear foot supports. The supporting base is from B to LG, the line of gravity LG. Without the rear foot supports the body would shift forward to maintain stability, the center of gravity C would move to C_1 and the line of gravity LG would move to LG_1, so as to be within the limits of the supporting base. However, this shift forward to stand on the forefoot B could only be maintained for a short period of time. The center of gravity C would then move backward to C_2 and the line of gravity LG would pass beyond the support limit to LG_2. The pull of gravity would manifest itself on the body, there would be a rotation through arc *a*, the body would fall backward.

Figure 10 represents a condition in which there are no forefoot supports. In the right illustration the solid line represents the body without forefoot supports. The supporting base is from H to LG, the line of gravity, LG. Without forefoot supports the body would shift backward to try to maintain stability. The center of gravity C would move to C_1 and the line of gravity LG would move to LG_1 so as to be within the limits of the supporting base H to LG. However, this shift backward to stand on the heels could be maintained only for a short period of time. The center of gravity C would move forward to C_2 and the line of gravity would pass beyond the support limit to LG_2. The pull of gravity would manifest itself on the body, there would be a rotation through arc *a*, and the body would fall forward.

When the foot is in the high arch position due to the pull of the plantar aponeurosis and the intersegmental ties are relaxed, the foot acts as an arch or truss. As long as the plantar aponeurosis continues to prevent further flattening when the

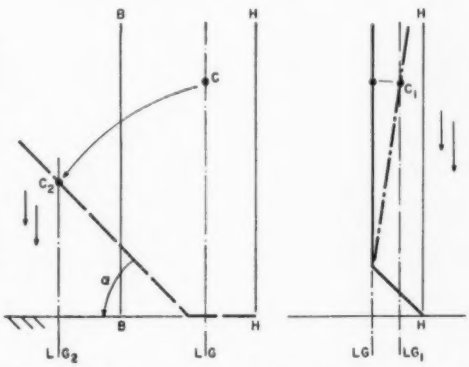

Fig. 10—No Forefoot Support, Loss of Stability

elongation limit of the foot is reached, the foot continues to act as an arch or truss.[9]

The factors of a true arch or truss are present only when the ends of the truss or arch are prevented from further extension between each other. The two ends are fixed such as piers, and in the foot the plantar aponeurosis is the structure fixed to the anterior and posterior pillars or piers. There is bending strain in the metatarsals and their normal convexity becomes slightly flattened and the foot acts as a beam at the same time it acts as an arch or truss.[9]

Being terrestrial bodies we walk or stand on solid state materials which are capable of forming a supporting base. Such materials are earth, sand, stone, concrete, wood and others. Materials that are plastic, such as soft earth, fine sand, allow the body to compress them by the pull of gravity on the body, until the reaction forces equalize the body or primary forces, and then form a solid supporting base.

Liquid and gaseous media are not capable of forming solid supporting bases. They are fluid, free to move in all directions, cannot offer resistance of support and thus cannot satisfy the Third Newtonian Law as applicable to the foot.[10]

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"The man who loves other countries as much as his own stands on a level with the man who loves other women as much as he loves his own wife."

Theodore Roosevelt

YALE CLUBFOOT SPLINT*

IRVING YALE, D.S.C., F.A.S.C.R.†
Ansonia, Conn.

THE treatment of clubfoot in its various degrees of severity has met with many varied approaches. These are well known to the orthopaedic surgeon and chiropodist but unfortunately they fall far short of fulfilling the need. We will not document the well-known therapeutic approaches now in use. Rather, we will supply the reader with a description of a new and more simplified approach to the treatment of all types of talipes. No method of therapy can serve as a panacea. The Yale Clubfoot Splint can be a help in control and completion of present techniques used in correction of the clubfoot. Alone it may serve as a complete mobile type of splint for correction of the pathomechanical problem. The versatility of this new modality can only be matched by the imagination and skill of the doctor. Whatever corrective forces have been used in the past can now be applied with greater precision without the mess and difficulties of applying and removing plaster casts. The splint is reusable and economical for repeated use on a variety of talipes.

This splint does not supplant the intelligent planned approach to treatment.

The Yale Clubfoot Splint

This device is unique in that it is light in weight, can be used with or without shoes, is capable of maintaining every imaginable position of the foot on the leg, forefoot on rearfoot and rotations of the lower extremity at the acetabular articulations.

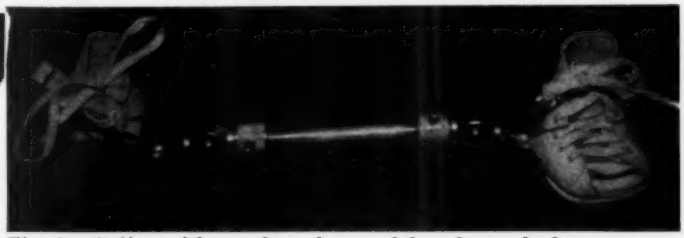

Fig. 1 – Splint with rearfoot shoe and fore-foot platform on right side. Bifurcated shoe mounted on left side.

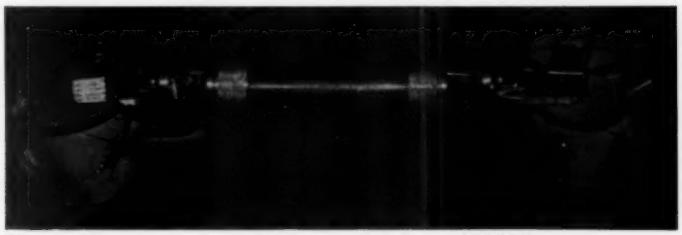

Fig. 2–Plantar view of clubfoot splint from behind.

The device is composed of rods within a tube extending from one foot to the other. It consists of a knurled cuff lock at each end which rotates and allows for extension or dorsiflexion with ability to stop and lock at any point in its rotatory excursion. At the end of the rod is a clevis machined on its lateral end to fit into a radial slot in a flat base plate. This allows for eversion and inversion, internal and external rotation. The radial slot described is milled in the plate attached to the heel of the shoe. A base plate is also attached to the forepart of the shoe with a double knurled dumbbell-like universal ball and socket joint extending from rear base plate to forefoot base plate. This type of arrangement allows for locking in adduction, ab-

*Presented at N.A.C. Annual Meeting, Chicago, August 1957.

†Consultant and Chief of the Chiropody Service, Orthopaedic Clinic, Yale University Medical School; Consultant and Lecturer, Department of Diagnosis, Illinois College of Chiropody and Foot Surgery.

duction, rotation, inversion, eversion, extension and flexion of the foot. All the above motions can be accomplished alone on a single foot independent of the other or in various combinations.

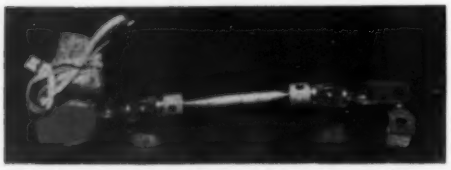

Fig. 3—Top view of rearfoot plate and forefoot plate without shoe.

If the device is to be used with a shoe it is necessary to cut the shoe through the midtarsal area into a heel part and forefoot shoe. The rear shoe has a strap extending medial to lateral binding down

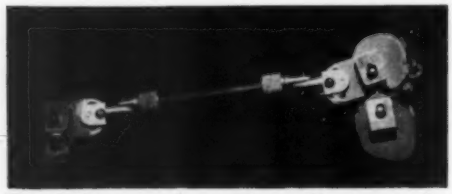

Fig. 4. Bottom view—Note adjustments for rearfoot and forefoot.

the rearfoot. The rearfoot base plate and forefoot base plate are simply screwed on to the shoe as illustrated. The abutting corners of the cut-through shoe are ground or cut down at an angle to allow for pivoting about a central axis following along

Fig. 5 — Left bifurcated shoe in external rotation, forefoot abduction and mild forefoot dorsiflexion from midtarsal joint.

with the universal ball and socket as described. The foot may be padded during treatment with a fine foam about 1/32" thick to minimize irritation and pressure sores.

The same device may be used by controlling the rearfoot through a shoe, cut as described, but utilizing a flat neolite or leather forefoot sole. A skillful doctor may control the rearfoot and move the forefoot from adduction to abduction, through equinus to eversion to dorsiflexion by binding the forefoot with adhesive tape or by other straps to the forefoot sole. The exact approach will depend on the status of the deformity and the knowledge and skill of the doctor.

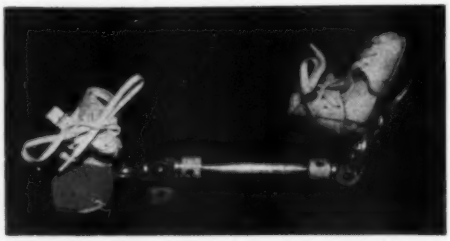

Fig. 6 — Leg abducted and externally rotated; foot dorsiflexed everted, abducted; forefoot dorsiflexed and abducted.

The shoe illustrated here is a *NOOO* size Pre-Walker (Sabel). The steel shank was removed upon cutting through the sole. Since the shoe is not being used for weight bearing, the steel shank is unnecessary. If

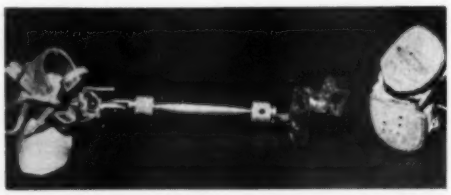

Fig. 7 — Presenting rearfoot and forefoot plate with sole of bifurcated shoe to demonstrate fixation of forefoot on rearfoot.

necessary, other types of sturdy infants shoes may be cut through at the midtarsal area and the counters stiffened with celastic for maintaining shape. A strap can be mounted as above if desired, and the shoes reversed from left to right.

(Continued on Page 520)

THE LEUCOCYTE DIFFERENTIAL AS AN AID TO DIAGNOSIS IN CHIROPODY

NANCY LU CONRAD, M.T. (ASCP), B.S., D.S.C.
Chillicothe, Ohio

The leucocyte differential as an integral part of the routine complete blood count is often neglected or disregarded in the interpretation of the laboratory reports in diagnostic work. This is particularly true if the procedure is done in the office by the practitioner because of the time consumed in performing the tabulation. Actually the dried blood smear can be stored for some time either before or after staining with Wright's stain until such time is available for an adequate examination. Although the oil emersion method is best, after a sufficient number of slides have been read it is possible to expedite the procedure by using the "high dry" objective and considerable time is therefore saved. It is also essential to observe a methodic constant manner of reading the slides as well as staining them or else bizarre, inaccurate results will be inevitable. It is not the purpose here to discuss the correct procedure for performing the test as this is adequately explained in any acceptable text of clinical pathology, but rather to discuss the interpretation of the obtained results briefly with reference to chiropodical diagnosis.

The general division of leucocytes is one separating the granulocytes (neutrophils, eosinophils, and basophils) from the agranulocytes (lymphocytes and monocytes). They all have at least one nucleus, are larger in size than erythrocytes, number about 5-10,000 per cumm., and are noted for their ameboid movement. A leucocytosis exists whenever the usual number is increased but it should be borne in mind that there are two types of leucocytosis, physiological and pathological. This fact must be considered in the interpretation of any increased leucocyte count; however, the pathological variety or that present in infections, inflammations, malignancy, and toxic conditions is the one most important in so far as a differential count is concerned here.

In the normal adult slide immature cells are a rarity whereas in the child under six there are usually some seen. Between the ages of one and six when many youngsters might be seen by a chiropodist the lymphocyte level is undergoing a gradual change from the high number present at three to six months to the number maintained then throughout normal adult life of about 20-40%.

It is necessary to understand that aside from the fluctuation of the relative numbers of cells with age it is important to bear in mind that various individuals react differently to various stimuli, for instance an infective agent or the different stages of the same infection.

According to Sabin there is daily a diurnal tide of leucocytes present in the late morning and late evening during which there is a leucocytosis with an intervening leucopenia. In these cases, however, the cause is physiological and the total number of cells are affected rather one particular type such as the lymphocytes or neutrophils alone.

To prevent error in diagnosis and to establish some type of prognosis one should realize that at the beginning of an infectious process there is an increase in neutrophils, usually a decrease in lymphocytes, monocytes, and eosinophils. As chronicity develops the neutrophils decrease in number and there is a subsequent rise in lymphocytes and perhaps eosinophils. Aside from infections there is a neutrophilic re-

sponse to chemical agents and acute hemorrhage. It is also significant that the state of immaturity of the neutrophils varies, for instance, as the disease progresses there are more immature cells present such as the non-segmented band forms and perhaps in some cases a myelocyte is seen which predisposes to a shift to the "left." Right here it should be recognized that the number or percentage of the immature cells does not determine the shift to the "left" but rather the proportion of immature to mature cells.

Although a decrease in leucocytes as a whole may indicate the recovery stage and improvement or as the case may be an exhaustion of the white cell reserve in the bone marrow, a leucopenia with a relative decrease in neutrophils may suggest a prolonged infection. The neutropenia may be brought about by a response to chemical agents such as benzol, aniline, arsphenamine, and others or as a result of radiation therapy or perhaps the decrease is due to diseases such as mumps, measles, German measles, brucellosis, typhus and typhoid fevers. It may even be present as one facet of aplastic anemia, leukemia, or malignancies invading the bone marrow, a condition which would also involve the erythrocytes and thrombocytes.

Another manifestation of severe infections is indicated in the neutrophils by the presence of toxic granules and vacuolization in the cytoplasm of the cells.

As was stated before at the age of ten days the lymphocyte level increases until they constitute about 50% of the white cells. They then decrease after two years until they reach the proper percentage which is maintained. In both acute and chronic infections a relative increase may be an indication of convalescence while an increase is also present in iron deficiency anemias. Lymphocytosis is common in pertussis but the cells are of the mature type rather than the immature type suggestive of leukemia and of course there is a characteristic increase of both number and type in infectious mononucleosis.

An aid to diagnosis is obvious in a leucopenia with a lymphocytosis, a situation found in typhoid, typhus, and dengue fevers, influenza, tuberculosis (healing stage), and the acute communicable diseases of childhood.

There are usually about 1 or 2% eosinophils in the circulating blood. However, when there is a significant increase one might think of certain infectious diseases or the healing stage of an acute infection. If the eosinophilia is 10% or above, then such things as allergies and intestinal infections with parasites must be considered. Also it may be the response of certain individuals to low grade chronic infections.

The monocyte or large mononuclear usually numbers about 2-6% of the total leucocytes. An increase is noted commonly in typhoid fever, acute infections, chronic poisoning with carbon tetrachloride, Rocky Mountain spotted fever, Hodgkin's disease, and tuberculosis.

The dark staining basophil is the rarest cell in the blood but is found to be increased in chronic inflammation of sinuses. chicken pox, small pox, blood dyscrasias, sometimes following the injection of foreign proteins, and in aleukemic leukemia which otherwise has a normal differential with a misleading low white count. There are some authors who say that an increase is limited almost exclusively to myelogenous leukemia.

The insight into the general condition of the chiropodical patient by the performance of the differential as a part of the complete blood count would seem to be therefore many times enlightening and invaluable to the chiropodist as he assumes

(Continued on Page 523)

CLINICALLY SPEAKING

A place for the more informal presentation of reminders, suggestions, notes, observations and technics of value in office practice. Your contributions of short manuscripts or illustrative case histories will determine this section's usefulness.

COMMINUTED FRACTURE OF FIFTH METATARSAL

Open Reduction with Wire Fixation

WILLARD W. FINE,
D.S.C., F.A.A.C., F.A.C.F.S.*
Columbus, Ohio

Trauma to the foot may occur in varied and sundry manners. In some instances freak accidents cause injuries that are difficult to treat.

Most of us are quite familiar with the routine linear phalangeal or metatarsal fracture with no displacement of fragments or even those with some displacement. Splinting will suffice to retain the phalangeal fracture with no displacement. It is not sufficient to retain a metatarsal fracture. The accepted procedure is to immobilize metatarsal fractures in plaster of paris walking casts, preferably with a walking iron or caliper.

The following case presented a unique problem and required some ingenuity to solve it:

Examination and History—Patient male, white, age 52.

While watching television, patient experienced parasthesia as he was sitting with his legs crossed. When he uncrossed his legs and attempted to rise to change channels, he collapsed and fell flat on his foot, inverting same severely. The patient heard a loud snap and became nauseated. Regurgitation and nausea persisted throughout the night. Patient presented himself at the office in the morning, thinking he had a sprained ankle. X-rays were immediately made and a comminuted fracture of fifth metatarsal was diagnosed. (Fig. 1). Reduction casting with plaster of paris was entertained, but discarded when full evaluation was made. Patient was hospitalized immediately. An attempt was made to reduce the fracture under local block anaesthesia and traction. Under fluoroscopy the position looked improved, but the fragments soon assumed original displacement, due to muscle spasm. Open reduction was then decided upon and the patient was prepared for surgery.

Fig. 1—Preoperative.

Surgery:

Preoperative Sedation—Demoral 100 mg. c Atropine Sulph. 1/150 gr.

Anaesthesia—general—Sodium Pentothal.

Hemorrhage—Hemostasis controlled by Martin rubber tourniquets.

* Member Surgery Staff Mercy and Lincoln Memorial Hospitals.

Patient was prepared and draped. An initial incision of approximately 6 c.m. was made on the lateral aspect of the foot, directly overlying the entire 5th metatarsal. Incision then retracted wide with self retaining retractors and subcutaneous tissues divided. Incision then carried in depth to metatarsal by a combination of sharp and blunt dissection. The interosseous membrane and interossei muscles were then freed from the fifth metatarsal exposing the segments of the metatarsal. The distal fragment was then forcibly grasped with towel holder. Severe traction and rotation were applied to distal fragment. When good position was attained, the two fragments were held in apposition and fixation maintained by running two loops of silver 000 wire around both fragments. They were tied in this position. Fascia and deep structures then closed with chronic catgut sutures. Skin then closed with multiple interrupted vertical mattress black silk sutures. Pressure bandages then applied. (Fig. 2). No weight bearing was allowed for approximately 8 weeks. Patient ambulated only on crutches. Patients discarded crutches after 8 weeks and started to bear limited weight on foot. After 12 weeks, patient was completely ambulatory and bearing full weight on foot without trace of limp.

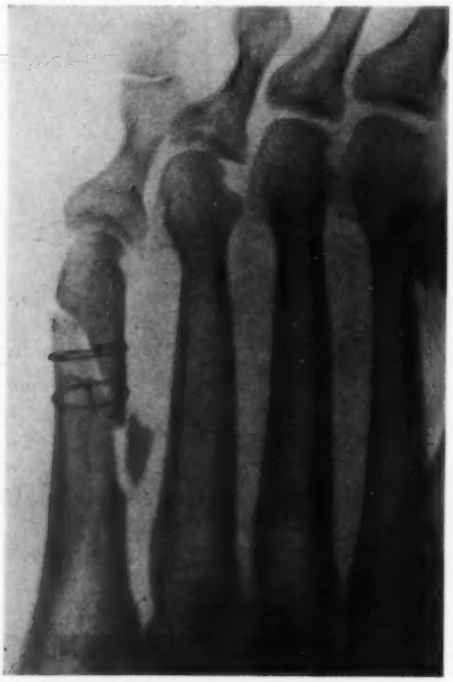

Fig. 2—Immediately postoperative.

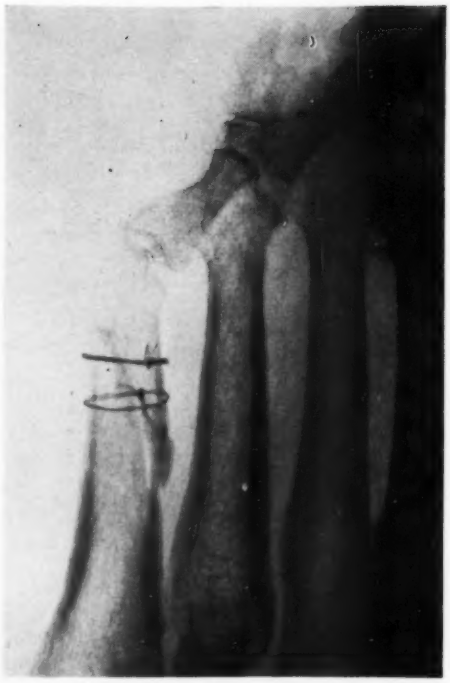

Fig. 3—Several weeks later.

Post operative hydrotherapy treatments were given. Patient recovered completely and returned to his occupation.

Radiologist Report:

"Left Foot—

The 5th metatarsal has been wired into satisfactory position with two loops of wire. There is still slight shortening with

the distal fragment tending to slide medially.

F. A. Reibel, M.D.
Radiologist, Mercy Hospital"

Some concern was expressed about the spicule that separated from distal fragment when reduced. It was thought that it might act as a foreign object and require removal at a later date. Later radiographic examination indicated it to be fusing with the metatarsal shaft and that no further intervention would be required. (Fig. 3).

83 South High Street

PLACIDYL IN PREOPERATIVE AND POSTOPERATIVE SEDATION

SEYMOUR H. BLAU, D.S.C.
Jersey City, N. J.

It is established medical policy that a patient needing sedation should receive a sedative appropriate to his individual circumstances. Morphine and other narcotics are not necessary in preoperative medication unless the patient is experiencing severe pain. Narcotics may even be undesirable in many cases of minor surgery or injury.

This paper reports a number of cases in which Placidyl®[1] (etchlorvynol) was used for preoperative and post-operative sedation. In each office case the patient's history was recorded, a physical diagnosis was made, and a complete blood count and urinalysis were performed. If the findings were within normal limits the patient was prepared for surgery.

The following schedules of medication were employed in one-hundred cases of office surgery which included skin planing, removal of cysts, and bone surgery. All home medications were ingested with milk.

1. *Eighty* patients received 200 mg. of Placidyl thirty minutes preoperatively, 200 mg. of Placidyl upon completion of surgery, 200 mg. of Placidyl thirty minutes before bedtime, and 200 mg. of Placidyl on the day following surgery.

2. *Fifteen* patients received 500 mg. of Placidyl and one-quarter grain of codeine thirty minutes preoperatively, 200 mg. of Placidyl upon completion of surgery, 200 mg. of Placidyl thirty minutes before bedtime, and 200 mg. per day for three days following surgery. These patients also received one-quarter grain of codeine intermittently for three days as required to ease pain.

3. *Five* patients received 500 mg. of Placidyl thirty minutes preoperatively, 200 mg. of Placidyl upon completion of surgery, 200 mg. of Placidyl thirty minutes before bedtime, 200 mg. of Placidyl daily for three days following surgery. These patients also received one-half grain of codeine intermittently for three days as required to ease pain.

Patients varied in age from sixteen to fifty-eight years. On the above dosage schedules, two patients complained of nausea. Eight patients experienced mild "hangover" symptoms and milk vertigo. All of the other patients were more quiet, less apprehensive, more relaxed, and more cooperative after Placidyl medication.

Summary

One hundred patients requiring office surgery for skin planing, removal of cysts, and bone surgery, received Placidyl preoperatively and postoperatively on one of three dosage schedules. Two of these schedules included codeine. In ten per cent of the patients, minor side effects occurred. Ninety per cent of the patients experienced a satisfactory state of sedation without any undesired side effects. They were without apprehension, quiet, relaxed, and coperative to a degree not usually achieved with other sedatives. Indeed, the patients themselves expressed great satisfaction with this nonbarbiturate sedative.

194 Newark Ave.

®[1] Abbott Laboratories

JOURNAL

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PRESIDENT'S MESSAGE

In this, our year of destiny, we are faced with the awesome responsibility of establishing our schools on a sound and secure basis of economic stability, curricular expansion and greatly enlarged student body. The magnificent efforts of our distinguished Council on Education have been alarmingly crippled by the precarious financial instability of the schools. It is my overwhelming conviction that we cannot be a healthy and growing profession without institutions of learning that are stable and expanding and in a position to take advantage of the limitless opportunities for education offered in the second decade of the Atomic Age.

In this next decade all institutions of higher learning and especially professional schools will have to expand to accept up to double their present capacities. At the moment and for the next few years, the professional schools in the medical sciences are losing students to the enormously expanded demand for engineering, technological and physical sciences. This is of serious proportions in our schools. Less than 150 students (of these approximately 10% will not graduate) have been accepted this fall into the first year.

As with the other medical professions, it is the responsibility of every practitioner in his particular profession or specialty, not only to preserve but to make such contribution as is necessary to reach ever greater horizons of expansion and development. The smallest contribution he can make is to inform young people of the advantages and satisfactions in caring for our nation's foot health.

A special committee of the Executive Council has been appointed to investigate and evaluate plans in which every podiatrist-chiropodist and our friends can and will participate. It will examine Foundations that are now established. It will study all avenues that can lead to the stabilization and development of the financial and physical structure of our schools.

The development of our schools is the single greatest problem with which we are presently confronted. It is my responsibility to take vigorous leadership in the accomplishment of this objective. For this great task I shall require the moral and material cooperation from each and every practitioner in these United States.

JONAS C. MORRIS, D.S.C.

WALKING

Because most of our patients have difficulty in walking, we are prone to forget the major role walking should play in normal physiological activity. Painful feet, coupled with modern and easily accessible means of transportation, is reducing to the vanishing point the amount the average individual does.

The most common of all natural physical activity is locomotion. The object of locomotion is to move from one place to another. Primitively, this is for purposes of finding a mate, a better environment, to secure food, to avoid becoming food, and other related activities. A large part of the body is locomotor apparatus. In turn other physiological activities sometimes depend on locomotion for an assist to perform most efficiently.

Sedentary occupations markedly reduce this natural locomotor activity. Individuals who sit or stand for long periods of time are prone to develop problems associated with a sluggish return of blood in the venous system. Varicose veins and hemorrhoids are two such problems. These same people tend to have a higher incidence of heart conditions, ulcers, etc. Perhaps their small amount of physical activity, due to restriction of locomotion, compounds the tensions associated with individuals in sedentary occupations.

Walking is a physical activity that brings into play a very large part of the body. As the lower limbs are raised and moved, the trunk adjusts, and the upper limbs swing for balance. The peripheral circulation is increased, and muscular contractions actively accelerate the venous return.

The act of walking also provides a psychological lift to the individual. It tends to free him of, or at least for the moment subdue, the tensions arising from daily life. Have you noticed that people walking together must stop and stand still while disputing a point?

Many exercises have been devised for many purposes but ordinary walking is probably the best all-round form. This may account for a large measure of the popularity enjoyed by the game of golf. Of all the exercises contrived for the foot, the best general exercise for the foot is still walking.

During the time patients are under our care, and especially when they are discharged, are we advising them to walk and how to walk properly?

PAPERS FROM THE ANNUAL MEETING

This and the September issues of the Journal contain papers presented at our annual meeting held in Chicago this past August. In future issues we will continue to publish more of these papers. We expect to eventually report by means of a formal paper, or a synopsis, all of the proceedings of the scientific sessions.

No longer can we present the necessary scientific material in single sessions at our annual meeting. Reporting the papers in the Journal will not give you "firsthand feel" from the speaker, but will provide the next best method of receiving the information.

WASHINGTON REPORT

With the passage of the Civil Rights Bill, Congress completed its work for the first session. It was a very busy Congress and it enacted a fair share of laws, but none has a specific bearing on the activities of the podiatrist. Nevertheless, much that it did will have ultimate interest for the podiatrist and certain bills that were introduced too late in the session for adequate consideration will be taken up at its second session when it convenes again in January. It finally approved for the H.E.W., a budget of $2,871,182,781 which is $110,744,800 less than the Budget Committee had estimated.

The principal health concern among Washington officials at the present time is the threat of Asian Influenza. In mid-August, Surgeon General Leroy E. Burney of the Public Health Service, invited representatives of thirteen national, professional and voluntary health organizations to meet with him in Washington to discuss arrangements for dealing with the possible epidemic of Asian Influenza in this country. Current information on the origin, characteristics and spread of the new Asian strain of influenza, as manifested in various parts of the world, was reviewed and plans were discussed with the leaders of the organizations as to how they may assist by having as many Americans vaccinated with the new Asian strain vaccine as the supply will permit.

On August 30th the Public Health Service reported that 1,527,865 cubic centimeters (doses) of Asian Influenza vaccine had been released recently, bringing the total amount released since August 12 to 2,677,475 cc. Each of the six manufacturers of the vaccine has accepted a proposal to allocate vaccine supplies among the states according to population and the Public Health Service announced its endorsement of a recommendation that states and communities establish advisory committees to recommend those who should receive vaccine first, such as key personnel needed to provide medical care and maintain other essential services.

Since any part of the nation is as vulnerable as another to a possible influenza epidemic, a program giving each state and territory its fair share of the vaccine seems to be the most equitable way of distributing the vaccine geographically throughout the country.

Polio Vaccine

Asian Influenza has taken the limelight from poliomyelitis but great satisfaction has been given to the reports that the epidemic, which for years has been at its height during this time of year, shows fewer than half as many cases as in previous years. This is due probably to the widespread use of polio vaccine which is still being distributed widely. Researchers are attempting to develop a vaccine which would contain elements against both Asian Influenza and poliomyelitis.

Financial Report of Research Scientists

A new program of financial support for advance training of research scientists in the field of neurological and sensory disorders has been announced. A new program will help research scientists obtain additional specialized training for careers in teaching or research.

A previous program under which about 75 scientists received advance training during the last fiscal year was concerned exclusively with clinical training. The latter program is designed to encourage advance training in either the clinical area or in basic science areas.

1956 Veterans Administration Statistics

From the Veterans Administration, the following statistics, with regard to hospital operations during fiscal and calendar years of 1956 have become available:

VA Patients – Fiscal Year 1956

Facility	Admissions	Discharges	Average Daily Load
Hospitals	485,508	483,351	110,205
Domiciliaries	38,113	38,548	17,047
Contract hospitals	31,947	28,910	3,253
State homes	8,072	8,060	8,793

	Average Daily Load	Service-connected	Nonservice-connected
NP hospitals	54,581	30,565-56 %	24,016-44 %
TB hospitals	7,757	1,947-25.1%	5,810-74.9%
GM&S hospitals	110,205	40,602-36.8%	69,603-62.2%
Total hospitals	110,205	40,602-36.8%	69,603-63.2%

Strokes

The Public Health Service recently released a new illustrated publication on diseases of blood vessels of the brain, third ranking cause of death in the United States. Statistics show that strokes and other effects of cerebral vascular diseases caused an estimated 179,110 deaths in 1956. Approximately two million people are incapacitated or handicapped by brain blood vessel diseases, the booklet states. Strokes have been too greatly feared and misunderstood.

Dr. James Watt, Director of the Public Health Service's National Heart Institute, said that many persons suffering from cerebral vascular diseases can be restored to near normal lives. The booklet shows the five important ways in which vessel diseases impair the working of the brain in outlining steps involved in treatment and rehabilitation.

William Harvey Tercentenary Commemoration

The National Heart Institute and the National Library of Medicine jointly sponsored a program that was held Tuesday, September 17th, at the National Institute of Health in Bethesda, Maryland. Seven noted speakers, including Nobel Prize Winner, Dr. Andre Cournand, participated.

Beginning early in September, an extensive exhibit devoted to William Harvey and the circulation of the blood will be on display in the Clinical Center lobby for one month. The twenty unit exhibit fills one full wing of the lobby and it contains much rare memorabilia of William Harvey and attractive and educational material on the circulation.

"The interests of liberty are peculiarly those of individuals, and hence of minorities, and freedom is in danger of being slain at her own altars if the passion for uniformity and control of opinion gathers head."

Charles Evans Hughes

TECHNIQUES IN FOOT SURGERY

L. R. McCAIN, D.S.C., F.A.C.F.S., and N. H. KETAI, D.S.C., F.A.C.F.S.
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Illustrated case reports and discussions, suggesting approaches to chiropodical surgery, from the files of the American College of Foot Surgeons.

REMOVAL OF A FISH FIN FOREIGN BODY FROM THE FOOT

A fifty-nine-year-old white male presented himself for treatment on January 4, 1955, with intense pain and swelling on the dorsum of the right foot. Redness and heat were evident on close examination. The patient gave the following history:

On June 30, 1953, when fishing in Florida, a catfish was pulled into the boat and one of the fins pierced his right foot. On July 13, 1953, a physician in the locality removed two pieces of fin from the fourth and fifth toes with the benefit of X-Ray examination. No apparent discomfort was noticed for many months, with the exception of small pus pockets and small pieces of fin which came out of the skin without any apparent reason and then would immediately heal over.

However, in December, 1954, the foot began to swell and pain. The pain was intermittent, while the swelling would remain temporarily for a few days, and then leave. Toward the end of the month the swelling persisted, and the pain stayed continually.

Dorsal-plantar and oblique view x-rays were taken. The patient was put on warm Burrow's solution soaks.

On January 7, 1955, the patient entered the hospital for surgery.

Physical examination was negative except for infection in the right foot.

Laboratory findings: Serology was normal. The RBC count was 4,510,000; WBC 12,800. Hemoglobin 89%. Urine analysis was normal. Temperature, pulse, and respiration were within normal limits.

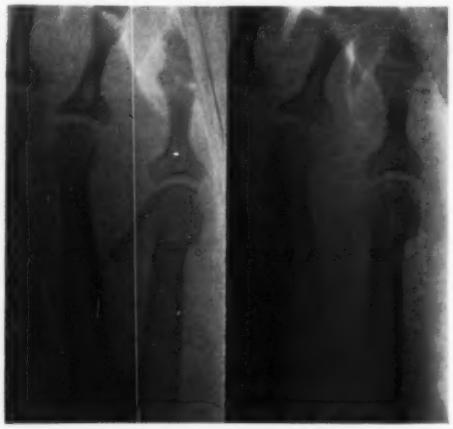

Fig. 1 — Left—Preoperative view showing fish fin visible in fourth intermetatarsal space. Right—Postoperative view taken on discharge of patient.

At 9:30 p.m. 1½ grs. of Nembutal®[1] were administered for sleep.

At 7:40 a.m. on January 8, one cc. (60 mgs.) of Nisentil Hydrochloride®[2] was administered subcutaneously for sedation and analgesia. The patient was taken to the operating room at 8:00 a.m.

Procedure: A skin incision 8 cm. long was made on the dorsum of the right foot between the fourth and fifth metatarsal shafts. The incision was deepened by use of sharp and blunt dissection. Below the subcutaneous tissue an abscess was opened and cleaned out. The foreign body was exposed (a catfish fin) and irrigated. Bleeders were tied with 000 plain catgut and a sterile drain inserted. Skin closure was made with 000 stainless steel sutures.

®[1] Abbott, ®[2] Roche

The patient was returned to his room at 9:00 a.m. 400,000 units of penicillin was given daily. Zephiran chloride®[3] soaks were applied to the foot every four hours while awake. Postoperative medications were not necessary for pain. 1½ grs. of Nembutal were administered at bed time for sleep. The patient was dismissed from the hospital on January 10, 1955. The drain was removed on January 13, when all signs of infection were gone. The sutures were removed on January 17, and hydrotherapy was administered on January 21, 25, 29, and February 4, 1955.

Postoperative x-rays were taken on February 8, 1955, and the patient was dismissed completely healed.

Earl G. Kaplan, D.S.C., F.A.C.F.S.

Comments: This is an example of one of the many interesting cases who present themselves for treatment at the chiropodist's office.

L.R.M. and N.H.K.

REDUCTION OF A HAMMERTOE BY USE OF AN INTRAMEDULLARY PIN

A white woman, aged thirty-one, seen in the office presented hammered fifth toes bilaterally that were very painful when wearing shoes.

Examination of her serological findings indicated hemoglobin 12.95 gms.; R.B.C. 4,480,000, W.B.C. 8,350; differential Segs. 65, Lymph 35. The urinalysis was negative for sugar.

Procedure: After sterile technic had been used anesthesia to the toes was effected by use of a toe block, using 1½ cc. of Xylocaine®[4] 1% plain each toe.

On the left foot a straight incision was made over the metatarsophalangeal joint and carried distally to the proximal interphalangeal articulation. By blunt dissection the metatarsophalangeal articulation was exposed and a capsulotomy and tenotomy carried out. The head of the proximal phalanx was exposed and with a gigli saw excised, and a "Y" type incision made in the skin. The phalangeal stub could not be retained in proper alignment and a .045 intramedullary pin was inserted in an incision in the distal end of toe and through the middle and into the proximal phalanx. Four 000 dermal sutures of the interrupted type were used in closing the wound.

The same procedure was used on the fifth toe of the right foot, excepting that a longitudinal elliptical incision was used to remove the heloma.

Telfa®[5] was applied next to the incision and a sterile compression dressing placed over this.

Postoperatively the patient was given a prescription for eight 250 mg. Ilotycin®[6] tablets, with instructions to take one every six hours. Also, postoperatively the patient was given a prescription for six 5 mg. Methadon®[7] tablets with instructions to take one every six hours if necessary for pain.

Postoperative treatment was as follows: On the day following surgery a house call was made and the compression bandage released. A sterile dressing was then applied over the Telfa. On the third day after surgery a new sterile dressing was applied to the wound. On the eighth day the sutures and pin were removed, and a complete new sterile dressing made. A metatarsal bar was applied to the shoes, and the patient returned to work. Five days following this a new sterile dressing was applied, and postoperative x-rays taken. The patient dismissed on the twenty-fifth postoperative day.

J. W. Hembree, D.S.C., F.A.C.F.S.

®[3] Winthrop-Stearns
®[4] Astra
®[5] Bauer and Black
®[6] Lilly
®[7] Abbott

Comments: The use of the intramedullary pin in surgery of this type has rarely been found necessary. We have seen instances in which it was used where a heloma has developed on the distal end of the toe, thereby giving the patient discomfort. It is our belief that one of the other types of surgery already presented is the procedure of choice in the reduction of a hammertoe.

L.R.M. and N.H.K.

THE PODOPEDIATRIC CLINIC

JOHN T. SHARP, D.S.C.
Chairman, Committee on Children's Foot Health

This section is devoted to a discussion of the problems peculiar to the child's foot. A separate subject will be considered each month, on a question and answer basis. Members are invited to send in their questions relative to the various phases of podopediatrics. Questions will be answered in accordance with the heading under which they fall.

SKIN DISORDERS IN PODOPEDIATRICS

What are some of the considerations in a good skin examination?

In an adequate examination of the skin from a podopediatric standpoint, one should observe not only the obvious lesions present, but in addition the skin should be considered from the angles of color, pigmentation, flexibility, temperature, and hair distribution.

What is the significance of color changes in the skin?

Abnormal deviations from normal skin color may result from various conditions, some of which are purely local while others are manifestations of systemic disease. A few of the conditions producing alterations in skin color are as follows: local irritations from thermal or chemical agents may produce redness or vesiculation; circulatory problems give rise to varying degrees of redness or cyanosis; the skin may be bronzed in Addison's disease; it may present large irregular brownish nevi in polyostotic fibrous dysplasia; or it may exhibit the small bluish petechia characteristically seen in conjunction with increased capillary fragility. Metal poisoning from substances such as silver, lead, mercury or bismuth also produces characteristic changes in the normal skin color.

What are some of the conditions producing changes in skin pigmentation?

In general pigmentation may be either increased or decreased. Increased pigmentation is seen in conjunction with jaundice, chronic uremia, myxedema, and the ingestion of certain chemicals such as atabrine and picric acid. Metallic poisoning and overexposure to the skin also produce this condition. Decreased skin pigmentation is associated with disorders such as vitiligo, edema, anemia, albinism and endocrine dysfunction.

What conditions produce changes in skin texture?

There are several of these. Examples are: thickening of the skin locally due to pressure or friction, generalized thickening and courseness as the result of cretinism (hypothroidism), and thinning and increased flexibility of the skin seen in the so-called Ehlers-Danlos syndrome. The disorder known as keratosis palmaris et plantaris produces heavy callousing of the skin of the palms and soles.

What are some of the disorders producing changes in skin temperature?

Changes such as these are usually secondary to infection or to circulatory disorders. They are usually associated with changes in skin color.

What are some of the disorders associated with abnormal hair growth?

Growth of hair, as the result of various disorders may be either diminished, lost or increased. Sparseness of hair growth is associated with alopecia and with certain disorders of circulation. Hypertrichosis or increased hair growth is seen in conjunction with endocrine dysfunction, congenital anomalies, and malnutrition. The condition known as spina bifida occulta, which is a disorder in which there is failure of closure of the spinal column in certain areas, may occasionally present localized hypertrichosis over the area of the discrepancy.

What are some of the more common skin lesions seen in podopediatrics?

These include helomata and tylomata, tinea, atopic dermatitis, dermatitis medicamentosa, and verrucae. Blisters are also commonly observed in the child.

What is atopic dermatitis?

This includes the various skin disorders associated with hypersensitivity. Usually it is manifested in an eczematoid or pruritic type of lesion. In many other instances allergic reactions take the form of wheal-like skin eruptions.

What is dermatitis medicamentosa?

This is actually a group of skin lesions which result from the ingestion, inhalation or injection of certain drugs. Some of these are as follows: iodine, which often produces acneform, erythematous, or urticarial lesions; Penicillin, which may give rise to urticaria or to tinea-like conditions; salicylates, producing erythematous lesions usually, often with desquamation; and phenobarbital which may be associated with morbilliform, erythematous, or exfoliating forms of eruption.

What are some of the things to be considered in the management of tinea?

In the child, one of the more important tenets of therapy should be the avoidance of "overtreatment." Strong, exfoliative drugs should be shunned in favor of those medications which, although potent fungicides, are better tolerated by the patient. Many patients become progressively worse under a regimen of medicines containing salicylic acid. Further, some of these even develop secondary dermatophytid reactions elsewhere in the body. Measures which control the excessive perspiration commonly observed in the child are advisable. Certain sock materials, such as nylon, often aggravate the condition. Since there is apparently a definite allergic factor existing in many of these cases, the use of some of the newer preparations which combine antihistaminic drugs with fungicides seem worthy of trial.

What is the recommended procedure in cases of atopic dermatitis?

Primarily, it is advisable to locate as quickly as possible, the allergen which is responsible for the disturbance. This often requires painstaking investigation by a competent allergist. Warm, moist dressings such as boric acid, Burrow's solution, or starch are often helpful during the acute stage. The local application of antihistamines like pyrabenzamine, or one of the hydrocortisones are often of value, especially when combined with the ingestion of benadryl or chlortrimeton. Since pruritis often accompanies this disorder, the oral application of one of the preceding drugs is often required.

What is the best treatment for plantar warts?

Under the light of present knowledge, there is no specific for plantar warts. The method of treatment used is largely a matter of empiric choice on the part of the practitioner. The oral administration of fairly large doses of vitamin A seems of some benefit when combined with local therapy. Although probably the oldest

known method of treatment, acid therapy is still a satisfactory measure in the proper hands. Many of the currently popular forms of treatment produce excessive destruction of tissue adjacent to the wart, and give rise to scar tissue, which is often undesirable on a weight bearing surface such as the sole of the foot.

What is the best treatment for blisters?

Treatment of blisters is largely a matter of individual choice. However, the following approach, recommended by Thorndyke, has often been found satisfactory: after careful sterilization of hands, instruments, and field, the blister is opened in such a manner as to leave a small portion intact to act as a "hinge." Next the loosened portion is gently pulled back, the base underneath swabbed well with compound tincture of benzoin, and the "lid" of the blister is laid back in place. Two sterile gauze pads are placed directly over the site and gauze bandage or adhesive strips are used to secure these in place. This procedure is repeated in three to five days, and repeated applications are continued until complete healing has occurred.

YALE

(Continued from Page 506)

Conclusion

1. A simple device has been described for the treatment of clubfeet.
2. The doctor maintains complete control of the corrective force through adjustments and locking devices that are easily applied.
3. The Irving Yale Clubfoot Splint is light in weight, mobile, clean, economical and practical to use.
4. It appears at this early writing that the splint may be used for talipes equinus, equino varus, valgus, calcanei and other similar or more complicated variations. The foot deformities of pes adductus, metatarsus varus and metatarsus primus varus are easily controlled. Internal and external rotations of the femur at the hip and grades of tibial torsion may be splinted under controlled techniques.
5. A scientific device is offered the medical fraternity for further testing and evaluation.
6. Since this is a preliminary report describing a new device developed for the treatment of clubfoot, it is obvious that subsequent reports on its controlled clinical application are necessary.

The author wishes to thank Charles O. Bechtol, M.D., Professor of Orthopaedics and members of the Orthopaedics Staff, Yale University Medical School for their interest and encouragement; Mr. John Preston of Preston Machine Company, Ansonia, Connecticut, for his painstaking assistance in machining this splint; and Mr. Douglas MacLeod for his advice and counsel on engineering principles.

44 East Main Street

PHARMACEUTICAL PREPARATIONS FOR THE PROFESSION

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Chairman, Council on Chiropodical Therapeutics and Pharmacy

A column devoted to preparations, new and old, with emphasis on their value and uses in everyday chiropody practice. This is a regular monthly column prepared from information furnished by the pharmaceutical house. We invite questions, which we shall endeavor to answer, or obtain the answer.

Salimeph-C

Salimeph-C Tablets. Analgesic . . . Anti-Arthritic.

Description: Analgesic, skeletal-muscle relaxant which makes a dual attack on the pain-spasm cycle characteristic of arthritis and other musculo-skeletal disorders. Combines the most potent salicylate for pain relief with an antispasmodic for physiologic relaxation.

Formula: Each yellow scored tablet of Salimeph-C contains:

Salicylamide	250 mg.
Mephenesin	250 mg.
Ascorbic Acid	30 mg.

Action: Salicylamide is the most potent of the salicylates. Unlike other salicylates, salicylamide does not prolong prothrombin time or produce blood dyscrasias. Well tolerated in massive doses over long periods.

Mephenesin is a profound relaxant, reduces reflex hyperexcitability of the spinal cord without clouding consciousness. Promotes patient cooperation.

Ascorbic acid is supplied in ample amounts to compensate for adrenal ascorbic acid diminished during salicylate administration.

Indications: For interrelated pain and spasm of musculo-skeletal disorders such as rheumatoid arthritis, myositis, torticollis, bursitis, low back pain, osteoarthritis, industrial sprains, strains.

Kremers-Urban cites these advantages of Salimeph-C:

1. Exerts dual therapeutic action by relaxing skeletal muscle spasm, relieving pain, patient anxiety.
2. Provides effective analgesia with minimal dosage.
3. Well tolerated; no gastric irritation.
4. Restores, maintains vitamin C levels.
5. Offers sustained relief.
6. Like ACTH acts through pituitary-adrenal axis.

Administration and Dosage: 2 or 3 tablets four times a day, after meals, or with milk and at bedtime. Maintenance dose: One or two tablets daily.

Supply: C. T. yellow scored tablets in bottles of 100, 500, 1000. By Kremers-Urban Company, Milwaukee 1, Wisconsin.

Typical Prescription
Rx Salimeph-C Tabs
Disp Tabs No. C
Sig: 2 tablets after each meal and at bedtime.

Phyatromine-H (injectable)

For more prompt relief, where indicated. Antispasmodic, muscle relaxant.

Description: Each cc contains 0.6 mg. of physostimine salicylate and 0.3 mg. of l-hyoscyamine hydrobromide.

Action and Uses: An antispasmodic. By relaxing excessive muscle tension it relieves pain and corrects and prevents deformities of the involved joints. For use in the relief of skeletal muscle spasm in osteoarthritis, rheumatoid arthritis, fibrositis, bursitis, myositis and in relaxing muscles and joints.

Administration: Intramuscularly, 2 or 3 times a week.

Supply: Phyatromine-H—Ampuls of 1 cc —Box of 25. Also in multiple dose vials of 30 cc. By Kremers-Urban Company, Milwaukee 1, Wisc.

Sterosan (skin infections)

Composition: Sterosan (brand of chlorquinaldol) a new, iodine-free, synthetic compound.

Actions: Strongly bacteriostatic for gram-positive cocci (except pneumococci) and actively fungistatic.

Advantages: Effective against the great majority of skin pathogens. This is a distinctive chemotherapeutic agent unrelated to the antibiotics, sulfas or adrenocorticoids. No bacterial resistance, cross-sensitization or drug tolerance noted; not inhibited by purulent matter. This on the basis of data available to us.

We are told that this preparation is pleasing to use, light color, agreeable odor, stable, non-bleaching, virtually non-staining (any medication adhering to fabrics may be removed by routine laundering or dry cleaning).

Well tolerated over large body surfaces for prolonged periods, with minimal irritation or sensitization, Sterosan contains no phenol, iodine or other tissue-destroying substances.

Indications: Topical therapy of superficial pyogenic and mycotic skin disorders, localized infections and minor suppurating wounds, including Dermatophytosis, Folliculitis, Furunculosis, Pyoderma, Impetigo contagiosa, Impetiginized eczema, Infected dermatitis, Infected seborrhea, Sycosis barbae and Sycosis vulgaris.

Method of Application: Apply thin layer to affected parts. Sterosan Cream is indicated in the presence of exudation because of its slightly drying effect.

Sterosan ointment is preferred for dry lesions and protective dressings. Sterosan should not be applied to the mucous membranes or eyes as it may produce irritation.

How Supplied: Sterosan Cream and Sterosan Ointment are available in 3% concentrations; tubes of 30 Gm.

By Geigy Pharmaceuticals, Division of Geigy Chemical Corporation, 220 Church Street, New York 13, N. Y.

Typical Prescription:

Rx Ung. Sterosan 30.0
(Geigy)
Disp. tube No. 1.
Sig: Apply night and morning.

Xylocaine Ointment (brand of lidocaine)

Description: This is non-sensitizing and rapid acting topical anesthetic.

Properties: Xylocaine Ointment is noted for its unusually rapid penetration, profound and sustained anesthetic effects. It is non-irritating, nonsensitizing and free from toxicity. It does not retard healing.

Indications: Xylocaine Ointment controls pain, itching, burning and other unpleasant symptoms due to abrasions, inoperable anorectal conditions, herpes zoster, eczema and similar conditions. Also for application on skin and accessible mucous membranes to prevent and control pain during examination and instrumentation.

Composition: Contains 2.5% to 5.0% Xylocaine base in water-soluble carbowaxes.

Directions: Apply liberally for adequate control of symptoms. The use of sterile gauze pad as applicator is suggested when applying Xylocaine ointment on burned or broken skin.

Astra cites the following distinctive advantages of Xylocaine ointment: Powerful and enduring anesthetic effect; Its unctuous base (carbowaxes) melts readily at body temperature, spreads evenly and promptly, effecting intimate contact with nerve tissue in painful areas; Both Xylocaine and the carbowax base are very safe; Xylocaine ointment does not interfere with or retard healing; It is easily washed off with water and it is highly stable.

Supply: Available in collapsible tubes (5% also available in wide mouth jars),

each containing 35 grams. By Astra Pharmaceutical Products, Inc., Worcester 6, Mass.

Typical Prescription:
Rx Ung. Xylocaine 5%. 35.0
(Astra)
Disp. No. 1 Jar.
Sig: Apply to affected area b.i.d.

Prednis

Generic Name: Prednisolone.

Description: Each tablet provides 5 mg. prednisolone (synthetic analog of hydrocortisone). On a weight basis Prednis is 3 to 5 times as potent as cortisone or hydrocortisone and is thus active in one-third to one-fifth their dosage.

Action and Uses: Anti-inflammatory, antiallergic, antiarthritic and antirheumatic activity with considerably less risk of edema, sodium retention in average dosage. Dramatic, prompt and prolonged relief of symptoms in rheumatoid arthritis; bronchial asthma, hay fever and other respiratory allergies; allergic dermatoses, eczemas, poison ivy, drug eruptions and other inflammatory and allergic skin conditions; uveitis, optic, optic neuritis, retinitis and other inflammatory and allergic eye disorders; lupus erythematosus, scleroderma, dermatomyositis and other collagen diseases; frank adrenal insufficiency. Favorable symptomatic response in acute rheumatic fever, non-articular rheumatism, many malignancies, leukemia and certain blood dyscrasias.

Dosage: Dosage varies with the severity of the disease and with the individual patient. The initial dosage is 2 to 6 Prednis tablets daily, in divided doses. After one week, or sooner if favorable response is observed, the daily dosage is reduced by 1 or 2 tablets every 4 or 5 days until symptoms recur. Maintenance dose is established at the lowest dose which will keep the patient comfortable and symptom-free.

Supply: Prednis 5 mg. scored tablets, bottles of 100 and 1000. By Arlington-Funk Laboratories, Division U. S. Vitamin Corporation, New York 17, N. Y.

Typical Prescription:
Rx Tabs. Prednis
Disp. No. L
Sig: One tablet t.i.d.

CONRAD *(Continued from Page 508)*

the responsibility of the care of the extremities.

429 Riverside St.

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ABSTRACTS FROM THE CHIROPODY LITERATURE

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Editors of Local, State and Regional Publications are requested to provide copies to the Chairman of the N.A.C. Committee on Publications who is preparing this section of the Journal.

FUNGUS INFECTION

Fungus Infection, A. Myatt, The British Chir. J., 4:95-98, April 1957.

An investigation covered two years work with skin and nail specimens to determine if fungus infection existed in certain lesions. During these investigations Myatt found that many lesions which gave the appearance of tinea showed no fungus, yet others which he thought were not, showed abundant fungus elements. The subjects and treatments of the following are discussed: nails, pseudo-plaster irritation, inflammation with plaques and scales, hyperkeratosis of the heels, and plantar and interdigital fungus infection.

VERRUCA PLANTARIS

R. F. Triplett, Missouri Bulletin, Feb. 1957.

Dr. Triplett presents a reevaluation of a treatment of the ever perplexing verruca. He describes the technique, first using a 60% ointment of Salicylic acid for the first two treatments and a 25% Podophyllin ointment for the third treatment. When all the necrotic tissue is removed a dressing of C.B.U. Ointment (Warren-teed Co.) is applied.

With this mode of treatment, Triplett states his results have been approximately 82% successful. He further states that, in his experience, the mosaic type wart is non responsive to the podophyllin series.

TREATING A SPRAINED ANKLE

J. Brown, Chiropody Review, 4:16, April 1955.

Brown describes his method of treatment of sprained ankle, especially the type involving the External Lateral Ligament. He states he has been treating these conditions for the past 30 years with 100% success.

While holding the foot in a position of dorsiflexion, four strips of Elastoplast, three inches wide are applied in the following manner: The first strip—approximately 12 inches long is applied as a stirrup. The center of the strip is placed on the inferior surface of the os calcis and the free ends are brought up vertically covering the malleoli. The second strip—is 18 inches long. The center of the strip is placed under the base of the metatarsals, bringing the free ends up over the malleoli, applying more tension on the external free end, crossing the dorsum of the foot and finishing on either side of the Tendo-achilles. The third strip—is applied exactly as the second strip. The fourth strip—is also 18 inches long. The center of the strip is placed over the tendo-achilles, its distal margin about one-half inch higher than the os calcis, bringing the free ends around the malleoli, and crossing the dorsum of the foot.

IMPROVED CASTING FOR THE STATIC DYNAMOLD

Louis Rosen, Footprints of the Chir. Ass'n. of Fla., 1:3-4, July 1957.

Rosen uses "Cast-a-Foam" for the taking of his negative cast. The cast-a-foam tray is placed in front of the patient (barefooted) and the patient takes a natural forward step as in walking, stepping into

and out of the tray without stopping. This leaves an imprint of the foot in action.

On the positive cast, Rosen applies six to eight layers of liquid latex. Latex putty is spread over the cast, leveling the arch spaces and allowed to dry. The mold is removed from the cast, all excess is cut away and then placed into the shoe. The patient walks on the mold without stockings for twenty-four hours thus dynamically completing the appliance. Leather cover of choice is applied to finish mold.

A TREATMENT FOR ONYCHOMYCOSIS

Robert Ellman, Footprints—Chir. Ass'n of Fla., 1:4, July 1957.

Ellman has tried the following three drugs in combination on six patients with excellent results: Soridex (Kahlenberg Labs.), Medine-gel 2% (Medical Labs.), and Ammoniated Silver Nitrate. The technique used is:

1. Denude as much as possible without pain to patient.

2. Medine-gel 2% is applied about 1/16" thick to infected area and allowed to dry. Dressing is kept dry and patient is returned the next day.

3. The patient is instructed to apply Soridex b.i.d. or t.i.d. and is reappointed in four or five days at which time No. 1 and No. 2 are repeated. Patient continues use of Soridex.

4. This process is repeated for about four times at the end of which time debridement is completed. The patient is returned the following day and ammoniacal silver nitrate is applied. The use of Soridex is continued. Reappointment is made for four weeks. Upon return of patient treatment will vary according to existing condition.

BOOK REVIEW

THE POSTURAL COMPLEX

Observations as to Cause, Diagnosis and Treatment, Laurence Jones, B.S., M.D., Chief Orthopedist, Memorial Hospital, 1932-1943, Kansas City, Missouri; Visiting Orthopedist, Cedars of Lebanon Hospital 1944-1953; Midway Hospital 1948-1954, Los Angeles, Charles C. Thomas, Publisher, Springfield, Illinois, 1955. 156 pages with 283 Illustrations, $9.75.

The present text is of an investigation covering a period of more than fifteen years in which the author, Dr. Jones, has attempted to explain in a scientific fashion the mechanics that produce pain in the low-back, legs, and feet, due to a postural imbalance in the lower extremities.

The first section of the book is called the Postural Change and Evolutionary Adaptation, and describes the general evolutionary progression; the differentiation of the fore and hind limbs; Brain development; and the spinal column and cord that lead to habitually erect humanoid posture.

The meat of the book is the author's Postural Complex. This term is applied to the postural imbalance arising from the structural weaknesses of incomplete adaptation which is a major cause of a definite and widening pattern of symptoms.

The remaining sections of the text deals with the Radiographic techniques for the measurement of pelvic angulation; The Postural History and Examination; and Methods of Treatment.

It appears to this reviewer that the author presents his theory as the complete answer to low-back disabilities which, in my opinion, is rather doubtful. The book, however, is well presented and the photographs excellently done. The text is not reserved for orthopedists alone but should be interesting to all practitioners who are concerned with the problems of postural imbalances and neuralgias.

Robert Shor, D.S.C.

DIGESTS FROM THE LITERATURE

Anyone wishing to read the complete article, if not available in your local library, may borrow it through interlibrary loan. A microfilm may be borrowed from the National Medical Library, Washington 25, D. C., or a photo-duplication may be obtained from that library at a cost of fifty cents for five consecutive pages.

ANESTHESIA

Reactions During Topical Anesthesia, M. S. Sadove, R. F. Rose, et al. Illinois M. J. 109: 315-20, 1956.

Reactions produced by topical anesthesia occurred in 27 of 2,100 procedures (1.29 per cent). Eighteen of these 27 patients showed signs of central nervous system stimulation or depression, or vasomotor collapse, attributable to the drug. In three other cases atypical reactions occurred, 2 developing exacerbation of asthma and 1 had repeated laryngospasms. Of the 18 true reactions, 6 were severe, 8 moderate, and 4 mild. One patient died but was moribund at the time of endoscopy and lived only 48 hours. The amount of Pontocaine given was considered excessive but probably did not cause his death. Five patients who had central nervous system stimulation or depression responded in 5 to 30 minutes with no after-results, after given oxygen, intravenous fluids, repeated small doses of barbiturates to control convulsions, and vasopressors to control vasomotor symptoms when indicated. Among a group of 730 patients given 2 cc. of 1% Pontocaine and a maximum of 2 cc. of 10% cocaine by instillation through the larynx into the trachea, there was but one reaction. That barbiturates protect against these reactions was neither confirmed nor disproved. Some form of sedation is justified as premedication. The use of a sedative should be based on the needs of the patient, with consideration of weight, excitability, metabolic activity and the disease state. Intramuscular injection of barbiturates is preferred to oral. Morphine should be avoided in patients with bronchospastic states or respiratory difficulties. If pain is a problem Demerol or Nisentil may be preferable to morphine. The technique of administration is described. When using a topical anesthesia, resuscitative equipment and proper drugs should be at hand. The preferred drug is a short acting barbiturate in dilute concentration, administered intravenously. The patient must be watched and kept at a safe level through intravenous infusions, and if necessary vasodepressors. Demerol seems safest for asthmatics in pain. Many operators warn against use of Pontocaine in these patients.

CIRCULATORY SYSTEM

Use of Lumbar Sympathectomy in Circulatory Disorders of the Lower Extremities, L. F. Bush and P. C. Eiseman, Jr. Pennsylvania M. J. 59: 653-56, 1956.

Over a 4½-year period sympathectomy was performed on 69 patients; 58 were treated for lower limb circulatory disorders; 49 of them had unilateral and 9 bilateral operations. These patients, aged 17 to 88, had symptoms from 1 week to 9 months. Some patients had chronic ischemia for periods up to 8 years. Trauma to the foot had occurred in two-thirds of the patients. Twenty-six of 49 (53 per cent) with arteriosclerosis obliterans were diabetic. Only 1 of the total 67 patients died. One patient had massive gangrene of the leg postoperatively and required amputation. Of 32 arteriosclerotic patients treated, 65.2 per cent had gangrene or ulceration in the involved foot when first seen. Sympathectomy prevented progression of gangrene in about 50 per cent of these patients. The purpose

of lumbar sympathectomy is the abolition of the vasoconstrictor impulses to the peripheral collateral bed and interruption of the sympathetic reflex arc. This procedure seems a safe and valuable form of therapy in relief of discomfort arising from diminished peripheral circulation in the lower extremity, and aids in prevention of gangrene in patients with moderate arteriosclerotic disease, and checks extension of tissue necrosis in some patients. Earlier diagnosis and use of sympathectomy will improve the end results of procedures used in treatment of patients with chronic obliterative vascular disease.

Management of Lower Extremities with Chronic Arterial Insufficiency, W. H. Moretz. Geriatrics 11: 289-98, 1956.

The various treatments used in management of patients with inadequate arterial blood supply to the lower extremities are evaluated. Signs and symptoms of such deficiency in persons over 60 are easy tiring of the legs, colder feet, and slow healing of abrasions on the feet and legs. Usually these are disregarded until serious conditions arise. The cause in the older patient is usually arteriosclerosis. When only a small segment is occluded and the adjoining portions are normal, the short segment may be by-passed, treated by thromboendarterectomy, or excised followed by grafting. If the disease is diffuse throughout the peripheral arterial tree, arterography may be necessary to determine the extent of the occlusion. Non-operative therapeutic measures should be considered. The nutritional status of the extremity may be restored by use of transfusions, dietary supplements, reduction of over-weight, discontinuance of smoking, and good care taken of the feet (cleansing once a day, frequent changing of socks, and wearing of well-fitting, loose, broad-toed shoes).

Operative measures are of two types. those with direct vascular approach, and those with an approach through the sympathetic nervous system. Re-establishment of good blood flow to the area beyond the occluded segment of the main artery is obtained by thromboendarterectomy; excision and replacement by graft or prosthesis; by-passing by graft or prosthesis. These methods are described and illustrated. Autologous vein grafts, arterial homografts, and plastic fabrics are variously used. Sympathectomy will produce some improvement in nearly all extremities having an inadequate arterial blood supply, but its use is of questionable value in the treatment of the diabetic who is liable to a sudden catastrophe in an asymptomatic limb. It is not advocated in poor risk patients nor in patients with extensive gangrene. For patients with continuous night pains, a low thigh amputation is indicated, rather than sympathectomy. Vessel surgery will fail in cases where there is not a sufficiently good arterial tree distally to allow re-establishment of a good rate of blood flow.

Amputations in Peripheral Vascular Disease, J. Schmukler. J. Med. Soc. New Jersey 53: 106-11, 1956.

Prevalence of metabolic disorders in an aging population has caused an increase in amputations in peripheral vascular disease. Sudden onset of gangrene in an extremity may result from an acute occlusion, thrombotic or embolic, and necessitate part or total amputation. Gangrene, localized or extensive, with or without infection, can accompany arteriosclerosis and atherosclerosis, diabetic or nondiabetic, thromboangiitis obliterans, embolism or thrombosis, or polycythemia vera. Ischemia is common in all these. Two-thirds of the amputations are due to the progress of the disease and one-third to neglect of the patient, or to improper treatment. Morbidity and mortality decrease with advances in vascular surgery and the use of antibiotics and anticoagulants, together with correction of the associated diseases. The optimal amputation time depends upon infection, vascu-

lar supply, age of the patient, and his response to therapy. When infection is minimal and controllable, ultra-conservative therapy is advocated in Buerger's disease, arteriosclerosis, and diabetes. In gangrene due to embolism, or thrombosis, amputation should be delayed from 1 to 3 weeks to allow time for demarcation and development of collateral circulation. Sympathectomy, chemical or surgical, has not been established as helpful. Amputation depends upon the extent of the gangrene and infection. Single toe amputation is used for dry gangrene or ulcer of the distal end with good demarcation; transmetatarsal amputation with primary closure if gangrene is confined to the toes. Supramalleolar amputation is life-saving in cases of fulminating infection or severe associated disease such as carcinoma; mid-leg amputation is done if there is a reasonable chance for healing. Thigh amputation is indicated in cases of (1) extensive gangrene with infection of the leg and absent femoral pulse; (2) gangrene of the foot with flexion-contraction of the knee joint; (3) recent thrombosis or embolism of the femoral or iliac artery with high level of gangrene. The operative technique is described, together with postoperative care, rehabilitation and prosthesis. A series of 100 cases is reported, 48 of which were due to arteriosclerosis without diabetes and 33 with diabetes; 54 of the amputations were in mid-leg. An important part of treatment is showing these aged amputees the way to become useful members of society.

DERMATOLOGY, ALLERGY AND FUNGUS DISEASES

Treatment of Subacute and Chronic Dermatoses with a Tar Extract — Hydrocortisone Cream, J. Bleiberg. J. Med. Soc. New Jersey 53: 371-73, 1956.

The effectiveness of a combination of 5 per cent coal tar extract and 0.5 per cent hydrocortisone free alcohol in a vanishing cream base was studied in 207 cases of various types of dermatitis. Prompt relief occurred in all cases, but in three patients the improvement consisted of relief of itching only. Complete remission occurred in 64 per cent; good results in 23 per cent; fair results in 12 per cent. The combination was more effective than either medication alone, and more effective than preparations containing two times the concentration of cortisone alone. Results in anogenital pruritis were particularly remarkable. Clearance of symptoms occurred in 31 patients with refractory dermatitis (neurodermatitis, anogenital pruritis, atopic eczema).

Effects of Dehydration, Salt Depletion and Pitressin on Sweat Rate and Urine Flow, M. Pearcy, S. Robinson, et al. J. Applied Physiol. 8: 621-26, 1956.

A report is given of a study to determine the effects of dehydration, salt depletion and pitressin (administered intramuscularly) upon hourly sweat rates and urine flows in four men working in a hot, dry atmosphere for 8-hour periods. Water and NaCl balances were maintained by drinking salt solution during one experiment; in another, NaCl balance was maintained but the subjects were dehydrated; in another, water balance was maintained but NaCl depleted. When dehydrated, sweat rates were reduced by approximately 15 per cent. The sweat rate varied inversely with the variations of chloride concentrations in the extracellular fluid, occurring in relation to changes in water balance or salt balance. Urine flow was lowest when the subject was depleted of both water and salt. Drinking water during salt depletion was followed by reduction of serum chloride, marked diuresis and secondary dehydration. Pitressin when given to fully dehydrated subjects working in heat produced a marked antidiuretic effect without altering the sweat rate — suggesting that the antidiuretic hormone may not be the cause for reduction of sweating in dehydration.

A Note on the Shape and Size of the Human Eccrine Sweat Pore, S. Takagi and M. Tagawa. Japan. J. Physiol. 6: 47-49, 1956.

Experimental studies showed that the opening of the eccrine sweat gland on the skin surface is a round cavity into whose base a sweat-duct, or beaker, empties. The beaker is about 30 to 50 micra deep. The wall of the beaker is formed of keratinized cells which line the lumen as in a squamous epithelium. The aperture of the beaker is often more or less elliptical rather than circular, and is approximately 70 micra in diameter; the opening of the sweat duct at its base is about 16 micra in diameter. Assuming that a human has about 2 million, 300 thousand eccrine glands, the total dimension of the apertures of the beakers is about 88 sq. cm., and that of the openings of the sweat ducts about 4.6 sq. cm. This finding is similar to that of Kraus: that simple evaporation from the sweat pores may be too small to account for the ordinary amount of insensible perspiration, and that for this reason a greater role must be ascribed to the physical passage of water through the epidermis.

Acetic Acid Gel for the Treatment of Indolent Skin Infections, I. L. Ochs. Maryland State M. J. 5: 218-21, 1956.

Infected ulcerations in the skin may resist treatment because of underlying vascular or other physiological insufficiency, or because the organisms are fast to the antibacterial chemicals applied. To obviate the physical disadvantages of gauze dressings wetted by acetic acid, a gel containing acetic acid was formulated, which being capable of absorbing a considerable amount of exudate from the wound, reduces the need for frequent nursing care. A 20% acetic acid solution contained in a carboxymethyl-cellulose gel is made up into a pad about ⅓ inch thick, and placed between sheets of wax paper and cellophane. Thirty-six patients were treated for approximately six months, all with chronic leg ulcers and usually some insufficiency (venous, arterial, or both). A significant number did not completely epithelialize and grafting was required, but healing occurred to some degree in all patients. The prompt elimination of odor and exudate was pleasing to the patients.

A New Treatment for Seborrhea and Allied Skin Conditions (Fostex), A. M. Robinson. J. South Carolina M. Soc. 52: 253-54, 1956.

Fostex cream and cake used in treatment of 120 cases of seborrheic dermatitis of the skin and scalp over a 6-months period proved to be effective and non-toxic. It proved valuable also as adjunct therapy of acne vulgaris and dryness of the skin, and helped to cleanse comedones.

New Methods in Dermatology: A Review of the Past Ten Years, H. M. Shair. Amer. Pract. 7: 1268-71, 1956.

During the last decade early cases of syphilis have almost disappeared; a new method of diagnosing latent syphilis has been adopted, the Treponema pallidum immune-adherence test (TPIA); and penicillin therapy has replaced other forms of treatment. Lupus erythematosus is being treated with new drugs. The chronic discoid form which involves only the skin being treated with Aralen (chloroquin phosphate). The less common and more serious form, systemic lupus erythematosus, is responding to ACTH and corticosteroid therapy. The addition of antibiotics hydrocortisone preparations has been valuable in treatment of the eczemas when infection is also present. Internal use of ACTH and the corticosteroids in treatment of dermatoses is justified only in selected conditions, such as severe poison ivy dermatitis. Long term treatment of non-fatal dermatoses which respond to no other therapy is valid in just a few cases, and only in low, reasonably safe doses. Seborrhea and seborrheic dermatitis are being effectively

treated with selenium sulfide suspension preparations (Selsun) and a 10 per cent sodium sulfacetimide preparation (Sebizon). The antihistaminic drugs used in allergic skin diseases may be sufficient in acute cases of hives, but in severe acute urticaria, short treatment with ACTH or corticosteroids may be required; chronic urticaria may be kept under control by prolonged use of antihistaminics. Little advance has been made in treatment of infectious skin diseases due to viruses, bacteria and fungi. Aureomycin is helpful as a mouth wash in recurrent canker sores. Injections of Protamide are being used in cases of shingles, but do not prevent the severe post-herpetic neuralgia in the aged. Podophyllin in 20% alcohol or in compound tincture of benzoin is still advocated in treatment of "venereal warts." The treatment of bacterial infections of the skin (pyoderms) by the sulfonamides, penicillin or furacin ointment has been replaced by ointments containing polymyxin, neomycin, bacitracin, the tetracyclines and erythromycin. Superficial fungus infections are being treated with unsaturated fatty acid, propionic acid and undecylenic acid, but they are no more effective than older remedies. Fungus infections of the nails due to Trichophyton rubrum, usually considered incurable, have been reported cured in a few cases by local applications of sugar, lithium bromide and Asterol. Oxsoralen therapy has made vitiligo a less common disease. X-ray therapy (now in lesser doses), antibiotics and female sex hormones are used in therapy of acne vulgaris, with plastic planing of scarred tissues. A one-day cure of the now rare disease, scabies, is the gamma isomer of benzene hexachloride in cream or lotion.

DIABETES, GANGRENE

Diabetic Neuropathy (Neuritis Neuritis) J. I. Goodman. Amer. Pract. 7: 1397-1402, 1956.

Diabetic neuropathy occurs more frequently than generally believed if the large group of patients are included who have transient pains, paresthesias and myalgias which attend nonregulated diabetes and subside when the disease is controlled. Of 162 diabetics observed 62 per cent had some type of neurologic symptoms. The symptoms of aches, shooting pains, cramps, numbness, tingling or needling and stiffness occurring frequently in the legs and feet and less often in the trunk and upper extremities, are worse at night and are aggravated by cold. Paresthesia is present in most cases. In many cases vibratory sensation is impaired or lost in the toes, legs and feet; it may be the only evidence of nerve damage in diabetes and is a valuable diagnostic sign of neuropathy except in elderly individuals, since vibratory acuity decreases with advancing years. The achilles reflex was found absent in almost half of the patients in this study and the patellar reflex in approximately one-fourth; this loss is not associated with age until after 70, when about 20 per cent of individuals show loss of reflexes. Blebs of blisters appearing suddenly at the distal ends of the toes or on the lateral surface of the foot or heel may be precursors of penetrating ulcers and seem to arise from neurogenic factors. Deep, indolent, painless trophic ulcers frequently develop under the metatarsal heads and other pressure points on the plantar surface of the feet. Infected ulcers extending to the tendon sheaths, fascia or bone may cause pain in the extremities but will heal if not traumatized. They may be mistaken for gangrene.

The diabetic neuropathies are of three types, functional, organic, and posttreatment. The third disappears when insulin therapy is stopped and recurs when it is resumed. It frequently occurs after diabetes is brought under control and the possibility of its occurrence should be kept in mind. Ischemic neuropathy in gangrenous patients or in impending gangrene in these diabetic patients is believed by some to be the basis

for all diabetic neuropathy. The authors are of the opinion that true diabetic neuropathy is secondary to poorly regulated diabetes.

DRUG THERAPY

Side Effects of Antibiotic Therapy, J. P. Nasou and M. J. Romansky. Postgrad. Med. 19: 341-45, 1956.

The complications of antibiotic therapy are of three types: toxicities innate to antibiotics, complications due to host response to antibiotic therapy, and host complications occurring as responses of microorganisms during such treatment. Complications arising in production of antibiotic sensitivity are: skin manifestations; anaphylaxis; serum sickness; metabolic alterations and vitamin deficiencies. The skin reactions to penicillin are urticaria, vesicular reactions and exfoliate dermatitis, and less frequently, erythema, maculopapular rashes and erythema nodosum. Exfoliate dermatitis may become serious and lead to death. Streptomycin causes similar reactions. Few skin allergies are caused by broad spectrum antibiotics. Anaphylaxis following antibiotic therapy occurs within a few seconds to a few hours, and death may occur within two minutes to several hours after onset. This shock may follow penicillin therapy given in any form, by any route. Neo-Pencil is especially dangerous. Serum sickness, appearing 8 to 12 days after administration of antibiotics may be mild or severe and may last many months; it is caused almost entirely by penicillin. Patients known to be allergic to antibiotics should carry identifications noting this fact. Antibiotics should never be used promiscuously. Ecologic disturbances follow antibiotic therapy such as alteration of the patient's flora, or staphylococcal diarrhea; it can also cause a variety of fungus infections. Occasionally superinfection by a new organism during treatment of another infection is reported. A single antibiotic should be used when possible, and doses continued for an adequate period of time. Penicillin should never be given to a patient in coma.

Allergic Reactions to Common Drugs, A. G. Cazort. J. Louisiana St. M. Soc. 108: 215-20, 1956.

Sensitivity to drugs is increasing as new drugs are added. Drugs may cause any type of rash, whether exposure is by contact or ingestion. The most vicious contact sensitizers are the "caine" drugs, Furacin, penicillin, antihistamines, sulfas, and mercury. Sulfathiazole ointment used on an inflammed area, such as an old ulcer, is not recommended. Ointments are contra-indicated in all acute cases of contact dermatitis. A safe treatment is wet packs of materials such as aluminum subacetate solution, boric acid solution, or normal saline; if too drying, a nonmedicated cream should be used as a softener. Corticosteroid therapy is useful.

Mercury dermatitis is reported in a number of cases where arsenic was used for asthma. Penicillin causes more cases than all other drugs. Treatment is use of 1-1000 aqueous epinephrine as needed, and large doses of antihistaminics at regular intervals. ACTH or corticosteriods are helpful except in cases of tuberculosis, peptic ulcer, and severe diabetes. Prednisolone and prednisone are recommended as they do not cause serious water retention. When a patient reacts violently to penicillin, the effective treatment is aqueous epinephrine and not antihistamines or corticosteroids. Aspirin sensitivity can cause a severe, even rapidly fatal sensitivity reaction. It responds promptly to 1-1000 aqueous epinephrine. Such patients should be warned that any tablet, powder or medicine bought over the counter for minor ailments may contain aspirin. Treatment is the same as for penicillin reactions. Epinephrine should not be used in oil suspension or gelatin, as serious reactions may follow.

Intramuscular Neomycin as an Adjunct to the Surgical Treatment of Soft-Tissue Infections, A Prigot, A. D. Maynard and M. Avecilla. Antibiotics Annual 1955-56, pp. 127-30.

Neomycin, while nontoxic when given orally or used topically, on intramuscular administration can cause kidney damage or permanent deafness, when given in high doses or for prolonged periods. When administered at a basic dose schedule of 0.25 Gm. at 12-hour intervals, for 7 to 10 days no side reactions occurred. Twenty-five cases of abscesses and cellulitis, some associated with lymphangitis, responded within 24 to 36 hours with rapid regression of inflammation and gradual recovery, thereby obviating surgery or decreasing the magnitude of surgery required. In cases of serious infection which is resistant to other antibiotics, intramuscular injection may be used, despite risk of side reactions.

A New Antifungal Antibiotic, Amphotericin B, T. H. Sternberg, E. T. Wright and M. Oura. Antibiotics Annual 1955-56, pp. 566-573.

This new antifungal antibiotic was subjected to in vitro and in vivo studies in white mice. It showed a protective and therapeutic effect in doses ranging between 10 to 25 mg./Kg. given intraperitoneally daily in treatment of C. *immitis* and C. *albicans.* It proved nontoxic during periods of 50 to 71 days.

Fortified Broad Spectrum Antibiotics as Adjuncts in the Treatment of Surgical Infections of the Young, the Aged and the Debilitated Patient, A. Prigot and A. deL. Maynard. Ann. New York Acad. Sci. 63: 230-39, 1956.

Repair which continues as a serious infective process has been overcome depends on nutritional therapy, since nutritional equilibrium has been reduced through decreased absorption, decreased utilization, increased demand, and increased loss of nutritional elements. A combination of vitamins and antibiotics may supply the therapeutic nutriments. Thirty-five patients were treated with oxytetracycline and tetracycline, 250 mg. of the antibiotic together with the following vitamins: ascorbic acid 75 mg., thiamine hydrochloride 2.5 mg., riboflavin 2.5 mg., niacinamide 25 mg., pyridoxine hydrochloride 0.5 mg., calcium pantothenate 5 mg., vitamin B_{12} 1 mcg., folic acid 0.375 mg., menadione (vitamin K analog) 0.5 mg. Adults received four doses daily and children proportionately less. All made satisfactory recovery. This antibiotic-vitamin combination proved excellent in severe fractures of the aged. Some of the patients had metabolic disorders, some were chronic alcoholics or drug addicts, some had chronic heart disease or were senile; all had lesions involving stress or infection or a combination of both.

Anaphylactic Shock Following Intramuscular Thiamine Chloride, A. F. Tetreault and I. A. Beck. Ann. Int. Med. 45: 134-38, 1956.

A case is reported of anaphylactic shock following intramuscular injection of thiamine chloride in a 62-year-old man who had been hospitalized because of weakness in the left arm and numbness and tingling in the left upper arm and a "heavy head." A diagnosis was made of a minor cerebral vascular accident. Five minutes after receiving 1 cc. (100 mg.) of Betaxin (thiamine chloride) he had a severe reaction. Administration of levophed, aminophylline, benadryl, peribenzamine, and ephedrine sulfate was followed by recovery and discharge in 20 days. The final diagnosis was generalized arteriosclerosis, probable thrombosis of the right middle cerebral artery and anaphylactic shock. He had been given thiamine chloride over a period of five years and had probably become sensitized to the drug.

MEDICAL PRACTICE & GROUP PRACTICE

Guiding Principles of Medical Examination in Industry, C. D. Bridges. J.A.M.A. 161: 975-77, 1956.

A revision is presented of the publication of the Council on Industrial Health's "Medical Service in Industry — Industrial Health Examinations." The various types of examinations described are: original examinations (preemployment and preplacement examinations), periodic examinations which may be voluntary, or are mandatory for workers exposed to health hazards, and special examinations indicated at the time of transfer from one job to another, or possibly on retirement or termination of employment if there has been exposure to health hazards. The records should be kept confidential and access granted only on consent of the worker. Systems of rating are described. The bars to nonhazardous occupations are: (1) communicable disease, (2) incapacitative injury or disease, (3) mental illness preventing cooperative effort, or impairing judgment.

Developing the Equitable Fee Schedule, G. Marks. Western J. Surg. 64: 415-18, 1956.

The prevailing fee schedules are unfair to patients and to physicians. Fee schedules based on the actual average of time consumed are the best means by which an equitable schedule can be developed. The surgeon and the obstetrician-gynecologist are concerned with major procedure of intermittent incidence. Eight steps such physicians must take in arranging their fees are described.

Your Office Sets the Mood, M. K. Mills. J. Iowa St. M. Soc. 46: 230, 1956.

Emphasis is placed upon the need for the examining room where the patient often has to wait for a considerable time to be attractive in appearance. It should have soundproof walls to provide privacy. The patient may be helped to relax by having a record player in the room. All equipment should have an immaculate appearance. The laboratory and the x-ray room should also be kept well dusted; in fact, every part of the medical section of the office should be kept immaculate.

A Formula for Evaluating Disability, E. D. McBride, Amer. Acad. Orthoped. Surg., Instruct. Lect. Course 12: 275-84, 1955.

Compensation laws limit disability loss to a specific part of the body, but evaluation of disability must include an analysis of all the human factors which lessens the ability to work. The extent of a disease process which is superimposed on the injury and its consequences must also be estimated. The patient may be discharged by the doctor as able to return to work, but he may not be able to obtain re-employment. Also, a permanent state of maximal improvement may not yet have been reached. The doctor has to determine not only the extent of injury to the body, but also the extent to which the injury will reduce ordinary working capacity. The disabling factors to be considered are (1) the loss of function to one or more parts of the body, and (2) all physical disorders related to the disability. The method of analysis and evaluation of disability factors such as functional disability, the degree of severity, and functional deficiency, is discussed. A scale is suggested as a practical approach to percentage loss of earning capacity.

MUSCULOSKELETAL SYSTEM

Measurement of Bone Density: Bias and Variation Due to Radiographic and Photometric Techniques, D. Mainland. Ann. Rheum. Dis. 15: 115-18, 1956.

The formation of a Bone Density Center has provided a means for rapid assessment of bone density. In the study reported here, human bones (calcaneus, finger phalanx, distal ends of radius and tibia), aluminum, and ivory step-wedges were exposed on the same film to measure bone density shadow by photoelectric cells. The method proved a useful substitute for

visual assessment, even though because of masking effects of the soft tissue, bone minimal changes could not be accurately indicated. Before densitometry can be adopted as a laboratory method, however, it must be known how far the effects on direct photometer readings by technical variations in x-raying and processing are negativated by transformation of bone shadow readings in the thickness of a standard substance. With time and milliamperage constant, each factor tested—wedge-position, kilovoltage, film position in processing, speed of developing, fixation time, washing time, and drying method—can introduce bias, that is, a spurious difference between two films from the same substance. With these factors held constant, variations become low enough to apply the method to living subjects. This requires that the work be done by a research-trained technician under investigational laboratory conditions.

Paralytic Flat Foot Treated by Triple Tendon Transplantation, A. C. Bingold. Proc. Roy. Soc. Med. 49: 181-83, 1956.

A girl after poliomyelitis at the age of three, had a flat left foot and complete paralysis of the left tibialis anterior and posterior. When 6 years old a triple tendon transplantation was performed: (1) the heel cord was stitched to the inner side of the calcaneum; (2) the tibialis posterior tendon was divided 2 inches above the medial malleolus and the distal end stitched to the extensor hallucis longus tendon in front of the ankle; (3) the peroneus brevis tendon was stitched to the tibialis posterior tendon near its insertion. A plaster cast was worn on the foot for 5 months; 19 months after the operation, the shape and function were satisfactory.

Deforming Polyarthropathy with Excess Deposition of Cholesterol, A. L. Scherbel, T. E. Wilson, and J. B. Hazard. Cleveland Clin. Quart. 23: 200-11, 1956.

Examination of a 54-year-old man showed deforming polyarthropathy associated with extensive cholesterosis involving nodules, —pleural and synovial membranes, conjunctiva, and probably lung involvement. A year later the joint involvement was unchanged and X-ray of the chest showed the same atypical parenchymal and pleural changes. It was suggested that the liver had also been involved earlier but had healed with residual fibrosis and scarring. It was thought unlikely that the cholesterol accumulations could be attributed to transport of excess lipid to the affected areas, since cholesterol concentrations had always been normal or low. The mesenchymal cholesterosis seemed nonspecific and not limited to any single disease. The mechanism of free cholesterol accumulation is not known.

New Technique for Treatment of Mallet Fingers and Fractures of Distal Phalanx, F. E. Hillman. J.A.M.A. 161: 1135-38, 1936.

A technique of immobilization of the distal interphalangeal joint in extension is described in treatment of mallet finger, in which silk sutures are inserted through the soft tissues of the distal and middle segments of the injured digit. Stitches are passed from the palmar aspect up through the nail, and through vinyl tubing to protect the soft pad from pull of the sutures. Where the sutures are tied over the middle phalanx, a piece of tubing is inserted under the suture to relieve tension or pressure on the tissues. Nine patients, aged 14 to 45 years, were treated, with healing of bone on the fracture line and recovery of unlimited function of the interphalangeal joint. No immobilizing splint or cast is required, but a protective splint may be incorporated into the bandage. Complete healing occurs in 4 to 6 weeks.

Static Disorders of the Ankle and Foot, H. F. Moseley. Ciba Clinical Symposia 9: 83-110, May-June 1957.

The normal posture of the foot, distribution of body weight, evolution of the foot and theories regarding its instability, its structural variations, congenital anomalies and various diseases of the foot and toes are briefly and clearly described. Many excellent illustrations are given, in color, which can be helpful in diagnosis. No bibliography is included.

Two Cases of Myopathy Limited in the Quadriceps, J. N. Walton. J. Neurol., Neurosurg. & Psychiat. 19: 106-08, 1956.

The three cases reported in the literature earlier occurred in patients over 40 years old. The two patients reported here were aged 22 and 57, both with myopathic processes limited to the quadriceps, causing atrophy of the medial vasti and enlargement of the lateral vasti. Histologic findings in Case I showed no evidence of polymyositis, reported in other cases. The muscular changes were considered to be characteristic of progressive muscular dystrophy. Case II had similar symptoms, but no histologic study was made. The two cases were considered examples of a *forme fruste* of limb-girdle muscular dystrophy.

The Pathomechanics of the Paralytic Gait, A. Steindler. Amer. Acad. Orthoped. Surg., Instruct. Course Lectures 12: 189-200, 1955.

The following deficiencies are noted in the paralytic limb: Loss of ability to control the pelvis under weight bearing during the period of support and inability to give it the force necessary for compulsion and restraint; loss of normal forward and backward swing; inability to stabilize the knee joint and to shorten and lengthen the limb at this joint; loss of control of anteroposterior and lateral balance of the foot. The lack of control of pelvic stability is due to deficiency of the pelvitrochanteric muscles. In the sagittal plane there may be paralysis of the gluteus maximus or of the flexors of the hip — the latter rather rare. A substitute for the gluteus maximus may be provided by gravity, if held in check by antagonistic forces, such as the tensor fasciae, or the iliofermal ligament. Before trying to stabilize the knee by a brace, or the quadriceps is otherwise replaced, it must be certain that the hip flexors are able to stabilize the trunk as it is thrown backward. It is doubtful that the sacrospinalis can be used in substitution for the gluteus maximus to effect active extension of the hip joint because its contraction distance is less than that of the gluteus maximus, and, moreover, it does not fit into the pattern of normal gait. In the frontal plane there may be paralysis of the abductors and of the adductors. Substitutions for the gluteus medius which have been used with varying success are transposition of the tensor fasciae farther laterally to the iliac crest; use of the external oblique; replacement of the abductors by the vastus lateralis; transposing the upper and lateral portions of the gluteus maximus forward to the midcrest, and finally the most rational method — replacement of the gluteus medius by the iliopsoas. Inability to stabilize the knee joint may be due to paralysis of the quadriceps or paralysis of the flexors of the knee. In the former, the patient uses any of three expedients: forward bending of the trunk so that the line of gravity falls in front of the knee joint axis; placing the hand against the thigh and pressing backward; rotating the leg outward. Forward bending of the trunk is most frequently used. Substitution is not carried out until a previous flexion contracture is corrected. A method of substitution used is implanting the biceps into the patella. There is always danger of the transplanted biceps pulling the patella laterally, thereby dislocating it. Lateral displacement can be avoided by use of both internal and external hamstrings. Bilateral transplantations have proved best.

The operations used in paralysis of the flexors of the knee are: (1) fasciodesis

whereby there is a transposition of the posterior third of the fascia lata and of the collateral ligaments (Inman's method), or use of both collateral ligaments, attaching them posteriorly to the femoral shaft (Heyman's method), both of which provide a ligamentous check at the posterior aspect of the knee joint; (2) tenodesis, making use of the tendons to reinforce the back of the knee; (3) the osteoplastic method, or anterior bone block with the patella implanted into the tibia, a method less effective than fasciodeses and tenodesis; (4) arthrodesis which corrects genu recurvatum but leaves a stiff knee.

The various gaits in paralysis of the foot and ankle are discussed: inhibition and restraint (drop foot); loss of take-off (calcaneous deformity), and inability to control the lateral stability of the foot (paralytic valgus gait). Lateral imbalance interferes with normal gait more than anteroposterior imbalance. Lateral imbalance not only produces instability of the foot, but also has great effect on the knee and on the whole alignment of the body. A pathologic gait originating in local foot deformity is a source of strain and fatigue to the entire body.

Osteogenesis Imperfecta Tarda and Hyperhidrosis, P. L. Reilly. J. Med. Soc. New Jersey 53: 312-13, 1956.

A rare case of osteogenesis imperfecta tarda associated with hyperhidrosis is reported in a woman aged 21, who had acute hyperhidrosis of the tips of the fingers and secondary infection of the right thumb and index finger of four days' duration. She had a history of earlier fractures and members of her family had numerous fractures. Her head had a triangular shape because of increase of the bitemporal diameter and occipital protuberance. Neither of the tympanic membranes was blue. The finger tips were reddish-purple and beaded with sweat. Infection of the fingers was cleared by local treatment, incision and drainage. Characteristically, families of such patients have numerous fractures after infancy, but they gradually diminish after 20 to 30 years of age. At this age 60 per cent develop a progressive otosclerosis. This patient did not have the usual symptoms of exophthalmos, blue tympanic membranes nor brown discoloration of the teeth. The sudden onset followed a severe argument she had with her employer.

Pathomechanics of the Sacrolumbar Junction, A. Steindler. Amer. Acad. Orthoped. Surg., Instr. Course Lectures 12: 177-78, 1955.

Back pain and sciatica are not different clinical entities as generally supposed, but are different manifestations of a single pathologic condition centered around degeneration of the disk. Degenerative changes in the disk appear as early as the third decade and weaken the disk's function of serving as a universal joint securing the vertebral bodies to each other. It indicates an inability of the intervertebral function and a tendency to disk herniation. Protrusion of the disk and the resulting sciatica may be a later phase of the complex. Failure to find a disk protrusion does not indicate a hypertrophy of the ligamentum flavum, but rather an instability of the back which produces the strains and stresses. The equilibrium between tension stress of the spinal ligaments and pressure stress of the disk is destroyed by degeneration of the disk, causing painful stress reactions of the entire ligamentous structures of the sacrolumbar junction.

The seat of lumbrosacral pain is ascertained by use of the procaine test. Clinical diagnosis of spinal root compression is based on atrophy, sensory disturbances and absence of reflexes. The most dependable sign is the antalgic position. This means not only the position assumed in standing or sitting, but also restriction of motion apt to interfere with maintenance of this position as manifested by "leg signs." The

antalgic position is a constant objective sign, is involuntary and automatic, it cannot be simulated by the patient, and it disappears when the cause of the pain is removed. The antalgic position in lumbosacral strain and in sciatic radiation is described and illustrated. Three conditions must be considered in determining the exact level of disk protrusion: (1) the territory of radiation, which is fairly regular, (2) the objective sensory and motor signs, including reflexes and atrophy, although there is no constancy in these disturbances, and (3) the antalgic position and attitude.

A fissured degenerated disk may heal with a fibrous scar even after the lesion has penetrated and progress of the protrusion been arrested. This answers the question whether all protruded disks require operative removal or whether conservative treatment should be given a trial. There is no reason for fusing the spine when disk symptoms are predominant, the low back pain is absent or minimal, and the X-ray picture reveals no gross abnormality. Clinical reports have shown frequent occurrence of reversibility of the relationship of the disk protrusion to the spinal root, with cessation of the symptoms. This is confirmed by pathologic findings of a natural and spontaneous repair of the disk and of lumbosacral ligamentous structures. This healing is facilitated by rest, which allows an edematous disk to shrivel and fibrose to one-third or one-fifth of its size. Laminectomy and fusion have been necessary in less than 10 per cent of cases. The antalgic position is one of relief; therefore pressure on the root or strain on the ligamentous structures can be controlled by proper positioning. Armstrong (1952) reported the same conclusions. The antalgic position brings low back pain and sciatic radiation under control; although this does not mean recovery, it indicates that a degree of reversibility exists, and suggests the possibility of natural repair.

Electromyography of Muscles of Posture: Leg and Thigh Muscles in Women, Including the Effect of High Heels, J. Joseph and A. Nightingale. J. Physiol. 132: 465-68, 1956.

Studies were made of 21 women aged 18 to 28, while the subjects wore high heels and low heels. All of these subjects when standing at ease showed continuous activity in the soleus muscle; most of them showed no activity in the tibialis anterior, vastus lateralis, vastus medialis and hamstring muscles. In 17 of the 21 when standing at ease, wearing of high heels was associated with increased activity in the soleus muscle; 18 showed no change in the electrical activity of the thigh muscles. Increase of activity in the soleus muscle when wearing high heels is considered due to the line of weight being shifted forwards. It is suggested that in high heels the foot is plantar flexed so that the tendo-calcaneus is slackened and that the increased activity noted in the soleus muscle is due to the need to take up this slack and to prevent the body from falling forward at the ankle.

Mechanisms of Muscle Training in Man: Experimental Demonstration of the Overload Principle, F. A. Hellebrandt and S. J. Houtz. Phys. Ther. Rev. 36: 371-83, 1956.

Postoperative measures to prevent or alleviate disuse atrophy of skeletal muscles may help to restore their strength, power and endurance. An experimental demonstration of the overload principle and evaluation of the clinical techniques of applying strength developing exercises was made in 17 normal adult subjects, in a series of 620 experiments. Among the conclusions drawn were: (a) Repetitive exercises performed against heavy resistance increases strength and endurance; (b) repetition of contractions which place no stress on the neuromuscular system has little effect upon functional capacity of skeletal muscle; (c) the critical variable on

which extension of performance-limit depends is the amount of work done per unit of time; (d) speed with which functional capacity increases suggests that changes in the central nervous system is a contributory factor in training. The experiments indicated that over-loading of itself does not damage the integrity of normal muscular fiber, when the imposed stress consists of increases in resistance which is overcome volitionally. The validity of popular techniques of administering progressive resistence exercises clinically was not proved. 30 references.

NERVOUS SYSTEM

The Motorneuron Surface, R. W. C. Wyckoff and J. Z. Young. Proc. Roy. Soc. Med. 144: ser. B, 440-45, 1956.

The boutons, which are more numerous than generally believed, cover most of the surface of the nerve cell-body and dendrites. Methods are described whereby the terminal boutons on the ventral horn cells of the spinal cord can be observed. Electron microscopy shows the boutons apposed at the surface of the nerve well-body and dendrites, and covered by thin membranes. The boutons contain numerous bodies which strongly absorb electrons, and are probably mitochondria. The pre-synaptic nerve fibers, except where they swell to form boutons, are provided with thick sheaths. The space between neuronal elements is entirely filled with protoplasm of glia cells. Since protoplasmic material seems to extend up to the capillary walls, it appears that exchange between the neurons and the blood takes place by diffusion through glial protoplasm. The article is well illustrated by 28 plates.

Use of Hexamethonium and Dibenzyline in Diagnosis and Treatment of Causalgia, Fowler, F. D. and Moser, M. J.A.M.A. 161: 1051-53, 1956.

Hexamethonium, a ganglionic blocking agent, given intravenously or subcutaneously, acts within 1 to 5 minutes and lasts for 1 to 6 hours. Dibenzyline given intravenously or orally acts on the neuroeffector for a period of 2 to 24 hours. Hexamethonium 50 mg. in 10% cc. saline solution was administered, for a 10 to 15 minute period, to 25 patients with pain in an extremity with characteristics of causalgia. After lying down for one-half hour, the patients then received dibenzyline 10 mg. four times a day. If not improved after 48 hours the dose was gradually increased until a maximum effect was obtained, or a total dosage of 120 mg. a day was reached. Six patients obtained permanent relief and required no further treatment; 2 more were relieved after two courses of dibenzyline; 13 patients had relief, but pain recurred; 4 of the 13 required sympathectomy; pain in the others was not sufficient to warrant surgery. Patients who are unrelieved by this medication also have poor results from surgery. This treatment, therefore, can be used to predict the outcome of sympathectomy in causalgia.

NEW GROWTHS

Cartilaginous Tumors of Bone, M. Sherman. Amer. Acad. Orthoped. Surg., Instruct. Course Lect. 12: 233-42, 1955.

These tumors are considered under the following classifications: (1) benign (epiphyseal chondroblastoma, chondromyxoid fibroma; (2) usually benign (osteocartilaginous exostosis; (3) benign or malignant (enchondroma). (4) frankly malignant (chondrosarcoma). They may be very different in behavior, but less different in morphologic appearance. Many tumors fall in between in all shades of gradations, so that accurate classification is difficult. The diagnosis and treatment required will be influenced by the location of the tumor. The histologic and roentgenographic appearance is described of chondromyxoid fibroma and chondroblastoma; they seem to be entirely benign, do not undergo malignant degeneration, and are cured by surgical eradication. Osteocartilaginous ex-

ostoses are not true neoplasms, but occasionally give rise to chondrosarcomas. The solitary enchondroma commonly found in a small bone of the hand or foot can easily be shelled out; healing follows promptly. But when located in the pelvis or a long bone, this tumor may be benign, but when curettage is followed by aggressive recurrence radical excision is warranted even though there is no microscopic evidence of malignancy. The chondrosarcomas vary greatly in microscopic appearance and in behavior; spread may be very slow over a period of years, and cause death without metastasis; they may invade local blood vessels, or may spread even before local effects attract attention. The appearance of these various tumors is described and illustrated. It is emphasized that careful, patient study will allow accurate diagnosis and classification of cartilagenous neoplasms, though difficult, and that many of these tumors, even those frankly malignant, are curable.

Osteoid Osteoma, G. M. Hart. Jour. Lancet 76: 119-25, 1956.

Osteoid osteoma, a painful but benign neoplasm of bone, occuring mostly in adolescents and young adults, tends to heal spontaneously over a period of years, but surgical excision is sometimes necessary for relief of pain. Four cases are presented, and the literature on such cases reviewed. After complete removal of the nidus and a surrounding margin of sclerotic bone, the lesion is not apt to return. Excessive amounts of bone must not be removed or pathologic fracture may follow. Osteoid osteoma must be differentiated from bone abscess, syphilitic osteitis, xanthoma, eosinophilic granuloma, sclerosing osteomyelitis, Brodie's abscess and tuberculosis of bone. Quick and permanent relief of pain follows excision.

Soft-Tissue Tumors of the Extremities, Exclusive of Skin and Lymphatics, R. K. Ghormley. Arch. Surg. 72: 817-23, 1956.

These tumors chiefly involve the connective tissues and originate in the mesenchymal cells. Diagnosis is entirely dependent upon pathologic examination through operative exploration, except in certain types of lipoma and hemangiomas, which can be revealed radiologically. The Soules classification, derived from a study of 500 consecutive cases of soft-tissue tumors, which is a modification of the Stout classification, is listed. Some of these specific tumors are described, including plantar fibromatosis, fibrosarcosis, lipoma, liposarcoma, hemangioma, glomus tumor, rhabdomyosarcoma, traumatic neuroma, ganglion cyst, Baker's cyst, synovial-cell sarcoma, and xanthoma. It is emphasized that many of these tumors are curable if treated early by radical surgery. A surgeon should be prepared, if the pathologic examination shows the presence of the tumor, to operate at once.

Current Trends in the Management of Arthritis, D. A. Glomset. J. Iowa St. M. Soc. 46: 285-89, 1956.

Arthritic patients today rarely become cripples, and are able to carry on some form of gainful activity. Treatment should begin with salicylates, physiotherapy and rest. If improvement does not follow, meticorten orally or hydrocortisone by intra-articular injections should be tried. Butazolidine may be used, but the physician must have in mind the dangers of the drug. Gold salts may be used if all other remedies fail, but this requires frequent visits to the physician for shots and complex laboratory tests. The side effects of butazolidin are (1) gastrointestinal (anorexia, vomiting, diarrhea, exacerbations of duodena ulcer); (2) various types of dermatologic complications; (3) hepatic disorders; (4) hematopoietic manifestations (agranulocytosis, aplastic anemia, thrombopenia); (5) disturbance of the central nervous system (confusion, coma); (6) other conditions, such as pancreatitis, myocarditis, or nephrosis. Weekly blood counts and urinalysis are recommended. The drug is most effective

in gout (65 per cent of cases), rheumatoid arthritis (59 per cent), painful shoulder and osteoarthritis (20 per cent). 42 references.

Personality Structure and Dynamics of Patients with Rheumatoid Arthritis, A. D. Mueller and A. M. Lefkovits. J. Clin. Psychol. 12: 143-47, 1956.

The personality structure and unconscious motivation of 29 veterans with rheumatoid arthritis were evaluated by means of projective tests; the control group consisted of hospitalized psychoneurotic patients. The Rosenzweig picture-frustration test norms were used in evaluating aggressiveness in arthritic patients, and the Rorschach tests given to both groups. The arthritic patients were found to turn aggression inwardly so that they evaded or glossed over frustrating situations rather than expressing aggression extrapunitively. Early parental conflicts seemed to operate unconsciously, causing a defective personality integration. Otherwise no differences were noted between the arthritic and psychoneurotic groups.

Management of Chronic Arthritis, M. D. Levy. Texas J. Med. 52: 285-87, 1956.

Approximately 60 to 70 per cent of patients with rheumatoid arthritis respond rather well to most any type of therapy if it is not harmful in itself. Patients tend to go from physician to physician seeking a magic cure. Many arthritic patients are anemic and should be given iron, folic acid, vitamin B_{12} or liver extract; blood transfusions may be required if the anemia is severe. The amount of rest needed depends upon the degree of activity of the joint disease and the location of the affected joints. Physical therapy is indispensable, with passive motion progressing to active motion, with every joint in the body gently but deliberately moved. Salicylates are the most valuable therapeutic drugs. Gold salts injections are given to control active rheumatoid arthritis, but they have no effect on chronic changes; they are most effective when given early; a water soluble gold salt is preferred. Steroid therapy is effective only while it is being used; progressive joint changes meanwhile continue. The new drug Cordex has about the same effect as aspirin, but seems to benefit more patients than the salicylates; but further study of its effectiveness must be made.

Mobile Home Treatment for Rheumatism and Arthritis, T. F. Hines, G. E. deForest and E. L. Nyman. Connecticut M. J. 20: 538-40, 1956.

The Mobile Physical Therapy Home Treatment Unit in the Yale-New Haven Medical Center is discussed. Only clinic patients are admitted. The fee is on a limited income-fee basis. The equipment of the Unit cost approximately $250.00 and consists of hydrocollator steam packs of various sizes, a footdrop boot for progressive resistance exercises, iron weights for the boot, an adjustable aluminum cane and crutches, a bedboard which can be rolled up, an electric baker, cervical leg-traction outfits, and miscellaneous supplies. Patients can borrow some equipment from the Physical Medicine and Rehabilitation Department, and such equipment as parallel bars, crutches, braces and hand splints from the brace shop. Patients and their families are taught how to carry out the necessary treatments. The first year of operating the unit cost $4,100.00; 23.5 per cent was collected from the patients. An average of 12 patients were treated per month. It is thought that the home treatment plan can be used equally well in various severely disabling diseases with great saving of cost of hospitalization to patients and to agencies.

Soft Tissue Distress in Rheumatic Disease, P. J. Warter. J. Med. Soc. New Jersey 53: 407-11, 1956.

The suggestion is made that almost every crippling rheumatoid arthritis originates in a soft tissue swelling which disappears and reappears for many months before joint

symptoms appear. Fibrositis may be looked upon as a syndrome with a wide variety of causes rather than a definite clinical entity. Emotional disturbances cause many physical symptoms. The psychosomatic effect may be a local neuromuscular or vascular disorder, rising and falling with emotional tension. Except in the aged, an anxiety state in most patients with generalized fibrosis produces pain and symptoms representing a normal physiologic fatigue process from tension. Symptoms arising from fatigue reflect the body's inefficiency functionally, and its susceptibility to injury. Tension does not allow the muscles to relax, and under tension with spasm, every motion is a force against a residual spasm. Any trauma, physical, chemical, or psychic, affects the capillaries so that normal physiologic functions are impeded. Resultant poor blood flow in the vasa nervosum is a factor in causing pain related to the arthritids and soft tissue changes. A detailed history of the patient is necessary in planning treatment. Rest is the basis of sound treatment. Physiotherapy is a valuable adjunct in treatment, together with judicious use of physical aids. Muscle rehabilitation is possible through passive and active exercise. The patient should continue at work if possible, eliminating extra and unnecessary efforts involving the skeletal-muscular system as a whole. Relaxation from anxiety and tension may be obtained by use of a combination of 250 milligrams of propyl dioxolane and 0.25 milligrams of reserpine in enteric coated capsules. Capillary fragility and permeability are treated by use of a combination of hesperidin (100 milligrams) and ascorbic acid (100 milligrams) in capsule form. Hexylcaine or procaine infiltrated into a trigger point frequently brings rapid relief of localized tenderness and hyperesthesia. An intact preparation of high biologic value is used to supplement the diet, particularly when dietary measures are required to obesity.

Characterization of the Proteins of Human Synovial Fluid in Certain Disease States, K. Schmid and M. B. McNair. J. Clin. Invest. 35: 814-24, 1956.

Characterization of the synovial fluid protein was accomplished by two methods: (1) identification of the proteins by precipitine reactions after separation by electrophoresis (Graber method), and (2) separation of the proteins into six fractions by means of solubility differences, and then by chemical and physico-chemical methods, and by measurement of definite properties of proteins known to occur in blood plasma. The first method permits qualitative measurements and the second qualitative and quantitative determinations. The proteins of synovial fluid were thus characterized in patients with rheumatoid arthritis, neuroarthropathy, and traumatic injury of the knee. They were found identical with those of plasma as judged by several different methods — electrophoresis, ultracentrifugal analyses, separation by solubility, immunochemical methods and iso-binding measurements. The proteins identified were: fibrinogen, cold insoluble globulin, diphtheria antitoxin, antistreptolysin-0, isoglutinins, ceruloplasmin, *B*-metal-combining protein, *a*-1- and *B*-1 lipoproteins. Also isolated were albumin, *y*-globulin, and glycoproteins of low molecular weights and acid isoelectric points.

MISCELLANEOUS

Hypervitaminosis A, J. D. Pickup. Arch. Dis. Childh. 31: 229-32, 1956.

Cases of hypervitaminosis A are reported in a boy of 6 and a girl aged 4. In most previously reported cases the chronic poisoning due to vitamin A was caused by excessive and prolonged administration of either halibut oil or oleum percomorphum. In these two cases the poisoning resulted from administration of avoleum which had been continued in the boy's case for about 5 years and in the girl's case for 2 years. The initial symptoms are anorexia, fretful-

ness and itching; tender subcutaneous swellings occur over the long bones and skull, and fissures on the lips and other mucocutaneous junctions, with cracking and bleeding of the mucosa. Cortical thickening of the long bones occurs after the vitamin has been given for 6 to 15 months. There is also loss of hair and drying of the skin, with an erythematous rash. Enlargement of the liver and spleen suggests that serious and permanent liver damage may be produced by long administration of the vitamin.

Reorganized Blue Cross Unit Will Service National Accounts, R. K. Swanson. Hospitals 30: 46, 96-97, Aug. 1, 1956.

During the 25 years in which the Blue Cross membership has grown to 50 million, many changes in industrial patterns have created a demand for uniform national benefits and a central spokesman for these benefits. The reorganization of the Blue Cross Association not only deals with national employers and national servicing of subscribers, but also separates such operating problems from the Blue Cross Commission, which however will continue as the official trade association of Blue Cross Plans. It retains all activities which involve service to nonprofit health plans, as distinct from services to national employers and subscribers. The reorganization does not affect the basic relationship between hospitals and local Blue Cross Plans.

"Our Graphics Liaison Officer and her committee thought that the film Chiropody As A Career was very excellent and well produced, giving a superior impression of training and practice. They were most appreciative of having the opportunity of screening this film and asked us to convey their thanks to you."

MR. GEORGE FANNING,
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ORGANIZATION NEWS

Secretaries of local, state, regional, affiliated, subsidiary and other related organizations are invited to submit copy for these columns.

ALABAMA

Montgomery, Alabama was the host city and state for the Region Ten meeting this year. The speakers on the Scientific Program were: Howard Chapman, D.S.C., of Shreveport, La.; Morton Polokoff, D.S.C., Paterson, N. J.; Glenn Palmer, M.D., an Orthopedic Surgeon of Montgomery; Morris K. Upshaw, D.S.C., of the Executive Council, spoke on the N.A.C. at Work; A. Rubin, D.S.C., Secretary and Editor of the N.A.C., spoke at the banquet and presented to Dr. George D. Scherer a plaque, making him an Honorary Director of the N.A.C. Regional Plan.

Dr. David Riddle, 353 E. Main Street, Johnson City, Tenn., was elected President of Region Ten and Kentucky was selected as the host state for the 1958 meeting.

CALIFORNIA

At the recent annual meeting of the California Association of Chiropodists and Western Chiropody Congress in San Francisco, the following officers were elected:

President—Robert L. Jacoby, D.S.C.

President-elect—Lorenzo E. Johnson, D.S.C.

Vice President—William F. Eads, D.S.C.

Secretary-Treasurer—Robert O. Johns, D.S.C.

President Robert Shor presided over the meeting. The site for the 1958 meeting will be the Ambassador Hotel, Los Angeles, Calif., May 30-31.

Five divisions in the northern part of the state sponsored a seminar given by Raymond K. Locke, D.S.C. of Englewood, N. J. The highlight of this two-day meet-

"LIFE'S FOUNDATION — YOUR BABY'S FEET" is an outstanding and comprehensive booklet on the growth and care of children's feet. Written for the layman, it is concise, cleverly illustrated and will prove valuable especially to the parents of young children. Many Chiropodists have received a copy of this booklet and have ordered them in quantity. For those of you who have not ordered and for those who wish to reorder, please clip the order blank below and mail with your check for your supply.

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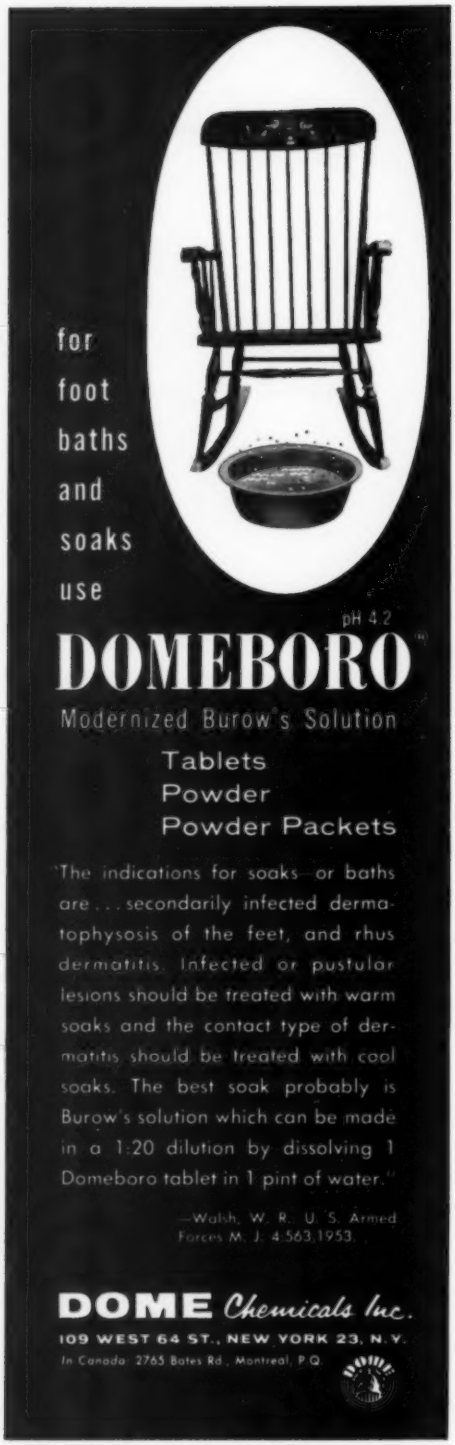
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—Walsh, W. R., U. S. Armed Forces M. J. 4:563,1953.
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ing was his presentation of the use of the cortico-steroids and other injectables.

On July 8th the Southern Division gave a testimonial dinner for Immediate Past President Robert Shor. Dr. Shor served two consecutive terms as president and was honored by a host of colleagues and friends.

MARYLAND

The following officers were elected at the May 5, 1957 meeting of the Maryland Chiropody Association:

President—Dr. Charles Stein
Vice President—Dr. Robert M. Derrick
Secretary—Dr. Michael Sherman
Treasurer—Dr. Robert J. Hill

N.A.C. Delegate, Dr. J. J. Ostroff; N.A.C. Alternate, Dr. I. Samuels and Zone Three Delegate, Dr. J. J. Ostroff.

MONTANA

At the annual meeting of the Montana Association of Chiropodists the following officers were elected:

President—Dr. Virgil Overcast
Vice President—Dr. Louise Berkin
Secretary-Treasurer—Dr. L. M. Jennings

Dr. Overcast appointed Dr. Carmen Friedl of Great Falls, Publicity Chairman; Dr. Clayton Ericson of Kalispell, Foot Health Week Chairman, and Dr. Donald Scott of Great Falls, Scientific Chairman.

Speakers at the meeting were: Dr. C. L. Stoker of Salt Lake City, and Dr. Robert McAlpine of Spokane.

NEW YORK

The House of Delegates of the New York State Podiatry Society met July 13th and 14th at the Sagamore Hotel, Lake George. Honored at the meeting were Assemblyman Malcolm Wilson and Mr. Bernard Chernin, their legal counsel. Mr. John Sandler, a legislative adviser and Mr. M. Guttenpan, counsel, addressed representatives. The meeting was chaired by Dr. Jerry Goldstein.

The contract for the services of Mr. Gilbert Hollander, Executive Secretary of New York, was renewed for five years at an increase. Mr. Chernin was also retained for another year.

A new pamphlet, "Care of the Feet," has just come off the press.

CALIFORNIA COLLEGE ANNUAL SEMINAR

The California College of Chiropody has announced the program of its 11th Annual Post Graduate Seminar. This year they are able to present Milton H. Erickson, M.D., of Phoenix, Ariz., on the practical aspects of hypno-therapy for the chiropodist. This program will be presented starting October 12th and 13th, San Francisco; October 19th and 20th, Los Angeles; November 2nd and 3rd, Salt Lake City, and November 9th and 10th, Seattle.

The college also is sponsoring a post graduate course in orthopedics to be given at the college for a total of sixty-four hours over eight Sundays, every fourth week.

A.S.C.R.

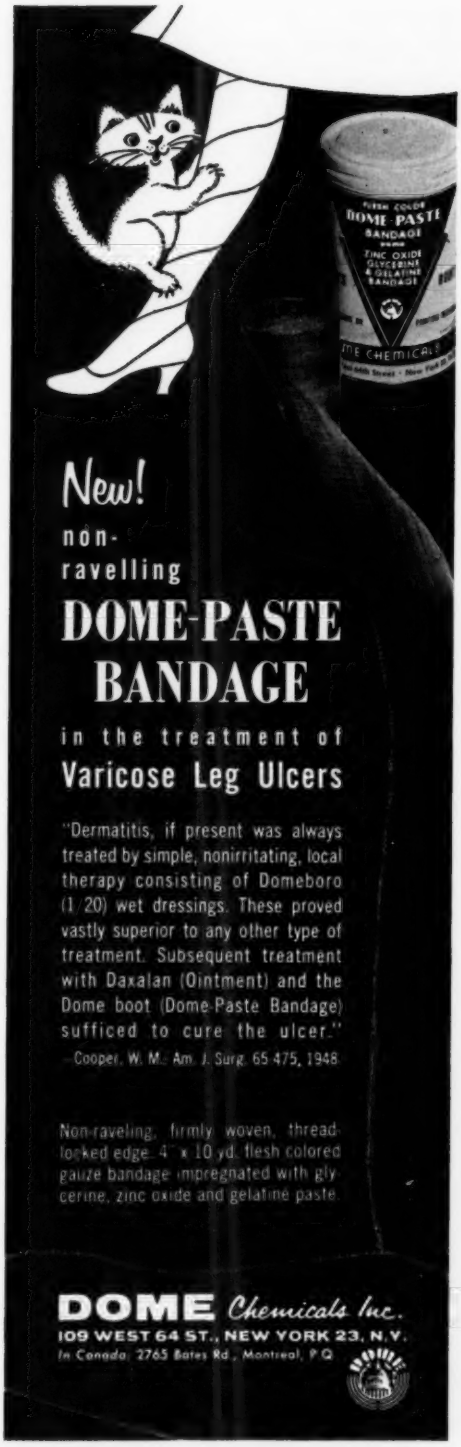
The following officers were elected during the American Society of Chiropodical Roentgenology annual meeting August 18, for the next biennium: President, Milton Lewis; 1st Vice President, James Bates; 2nd Vice President, Ralph Owens; Secretary, David C. Rasmussen, and Treasurer, Nathan Lambert.

A.C.F.O.

The American College of Foot Orthopedists held its Seventh Annual Dinner Meeting on Saturday, August 17, 1957, at the Drake Hotel, Chicago, Ill.

The following officers of the A.C.F.O. were elected for the year 1957-58: President, Dr. George C. Custer, Chicago, Ill.; President-elect, Dr. Morris Marcus, Miami, Fla.; Vice President, Dr. L. B. Thompson, Kenosha, Wis.; Secretary, Dr. Herman L. Siegler, Levittown, N. Y.; Treasurer, Dr. D. A. Goodwin, Marion, Ohio. Trustees elected for a two-year term: Dr. Murray Bromberg, Bloomfield, N. J., and Dr. Peter N. Varzos, Chicago, Ill.

Dr. Peter N. Varzos, retiring President of the A.C.F.O., was presented with a gold engraved A.C.F.O. Key, by Dr. Harvey Atkinson of Belmont, Mass., Past President of the A.C.F.O.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"Dermatitis, if present was always treated by simple, nonirritating, local therapy consisting of Domeboro (1/20) wet dressings. These proved vastly superior to any other type of treatment. Subsequent treatment with Daxalan (Ointment) and the Dome boot (Dome-Paste Bandage) sufficed to cure the ulcer."
—Cooper, W. M.: Am. J. Surg. 65:475, 1948
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NATIONAL BOARD OF CHIROPODY EXAMINERS

The Second Annual Meeting of the National Board of Chiropody Examiners was held at the Drake Hotel on August 18 in Chicago, Ill.

Gerald Casey, D.D.S., Executive Secretary of the National Board of Dental Examiners spoke on "Organization of Material for Use in a National Examination Program." LeRoy Numbers, D.S.C., Chicago, Ill., Registrar for the Illinois College of Chiropody, talked on "How our Colleges Can Fit into the National Examination Program," and Gordon R. Tobin, D.S.C., Twin Falls, Idaho, President of the National Board of Chiropody Examiners, on "Examination Material Program to Date."

A new set of by-laws was read and adopted.

The following officers were elected: President-elect, Pearce Nelson, D.S.C., California; Vice President, C. L. Meyer, D.S.C., Illinois; Secretary-Treasurer, L. A. Hansen, D.S.C., Missouri; Executive Committee, LeRoy Numbers, D.S.C., Illinois; M. Gennis, D.S.C., Oklahoma, and Chairman of Examination Test Committee, G. R. Tobin, D.S.C., Idaho.

FEDERATION OF CHIROPODY BOARDS

The Federation of Chiropody Boards held its Twenty-Second Annual Meeting on August 18 in Chicago, Ill.

Judge Vera Binks, Director of Registration and Education of Illinois, gave a splendid talk regarding State Rights.

The following officers were elected: President-elect, Robert Stess, D.S.C., N. J.; First Vice President, Morris Haas, D.S.C., N. Mex.; Second Vice President, P. H. Goulson, D.S.C., Minn.; Third Vice President, Morris K. Upshaw, D.S.C., Miss.; Secretary-Treasurer, L. A. Hansen, D.S.C., Mo.; Council on Education, beginning 1958, C. L. Meyer, D.S.C., Ill.; C. A. Nava, D.S.C., Ky., took over the Presidency for the ensuing year; C. L. Meyer, D.S.C., Ill., is the retiring President.

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ILLINOIS COLLEGE OF CHIROPODY

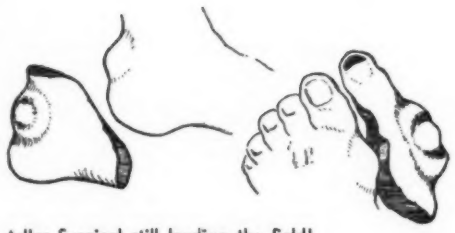
The 1947 class of the Illinois College of Chiropody and Foot Surgery held a reunion August 17 at the Drake Hotel.

Those attending were: Dr. and Mrs. Robt. L. Behrends, Dr. and Mrs. Lyle McCain, Dr. and Mrs. Frank DiGilio, Drs. Helen and LeRoy Numbers, Lola Riesgraf, Angelo Bonica, Thomas Baldwin, Dr. and Mrs. Neal Sharp and Dr. and Mrs. E. T. Thompson.

• • • •

No shoes. In Mexico's population of about thirty million, shoe manufacturers complain that four million adults who should be wearing shoes do not. It is reported that only a very small percentage of the natives in southeast Mexico and in the tropical areas wear shoes.

—Connecticut Chiropodist, Oct., 1956



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CONVENTION DATES AND MEETING NOTICES

National Association of Chiropodists
Washington, D. C.
August 22-26, 1958
Shoreham Hotel

Region One
(Conn., Maine, Mass., N. H., R. I., Vt.)

Region Two
(New York)
New York, N. Y.
Feb. 21-23, 1958
Barbizon Plaza Hotel

Region Three
(Del., Md., N. J., Pa.)
Atlantic City, N. J.
April 17-20, 1958

Region Four
(Ohio)

Region Five
(Ill., Ind., Mich., Wis.)

Region Six
(Colo., Iowa, Kan., Minn., Mo., Nebr., N. Dak., S. Dak.)
April 11-13, 1958

Region Seven
(Idaho, Mont., Oreg., Wash., Wyo.)

Region Eight
(D. C., N. C., S. C., Va., W. Va.)
Huntington, W. Va.
*November 15-17, 1957
Hotel Pritchard
*Note change of date

Region Nine
(Florida)

Region Ten
(Ala., Ga., Ky., Miss., Tenn.)

Region Eleven
(Ark., La., N. Mex., Okla., Texas)
Dallas, Tex.
June 19-22, 1958
Statler Hilton Hotel

Region Twelve
(Ariz., Cal., Nev., Utah)

AMERICAN COLLEGE OF FOOT SURGEONS
Las Vegas, Nev., Feb. 14-16, 1958

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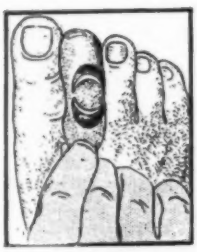
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COMMUNICATION FROM THE PROFESSION

To the Secretary and Editor:

Please accept the enclosed check to be applied towards the reduction of the deficit spending being incurred by the Association. Would you also please publish the following letter to the members?

Dear Members:

As a delegate to the 1957 N.A.C. House of Delegates, I have been made aware that the past two years have been the greatest in the history of podiatry-chiropody.

To accomplish so much, many times under strong opposition, it was necessary for us to operate under a deficit spending program which has amounted to more than $28,000.00 and may equal or exceed somewhat this amount in the next fiscal year.

An attempt was made at the House of Delegates to assess each member ten dollars, payable before January, 1958, to make up this deficit. However, this was voted down as being "unconstitutional," "uncollectable," etc.

Our elected officers and members of our paid staff have accomplished more for chiropody (podiatry) in the past two years than in the history of our great profession. Therefore, as there is no restriction on voluntary contributions to further the work of our Executive Body for us, let us see your name and money added to those who really care.

William S. King
Memphis, Tennessee

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LEGAL AND LEGISLATIVE

Massachusetts

The Governor has signed into law an act providing for chiropody treatments for recipients of old age assistance. This is through amending the law regarding old age assistance and states: "Such assistance shall also provide that every such recipient shall receive necessary chiropody treatment without requiring that the same be recommended by a physician."

New Hampshire

Practice Act has been amended providing for oral administration of narcotics, hypnotics and vitamins and the parenteral administration of drugs except for local anesthetics and local medicinal effect.

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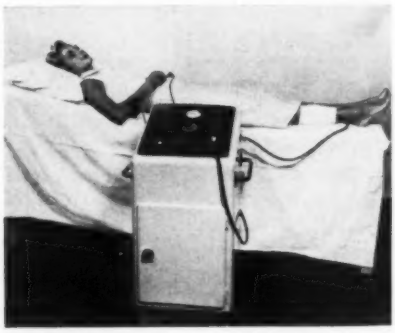

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3. Post-inflammatory lymphedema

DISEASES OF THE VEINS

1. Chronic venous insufficiency
2. Varicose veins
3. Varicose and/or stasis ulcers

The treatment is followed by a remarkably prompt alleviation of pain, improvement in walking capacity, relief of intermittent claudication, and the healing of ulcers and gangrene.

* Lyons, Meadows, and Fuchs. A New Method for the treatment of Peripheral Vascular Disease. Southern Medical Journal, Volume 48, Nov. 8, Aug. 1955, Pages 811-819.

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MOOD ELEVATORS

Contributions to this column are more than welcome. In fact it depends upon them.
A.O.P.

"When guests prepare to say good-by,
I ask, to be polite, if they
Must leave so soon, and often I,
Alas, discover they can stay."

Richard Wheeler

The Minister laid down the paper. "I knew both of these men as boys," he remarked to his wife. "One was a clever, handsome fellow. The other was steady and hard working and he went far ahead of the other. When he died he left $200,000 to his widow. That's the old lesson; the old moral."

"Yes," smiled the wife. "And I heard this morning that the clever fellow is going to marry the widow."

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Jack Herbert

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Walter Woerner

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Bill Vaughan

The big print giveth and the small print taketh away.

United Mine Workers' Journal

The older a man gets the better he could swim as a boy.

Charles Curran

PLAN NOW TO ATTEND . . .
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MID-ATLANTIC ASSOCIATION OF CHIROPODISTS-PODIATRISTS
18th ANNUAL SCIENTIFIC CONVENTION
NOVEMBER 16-17
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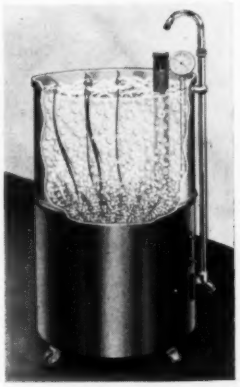

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ADVERTISERS INDEX

	Page No.
Adler Surgical Supply Co.	A10, A24
Archcraft Laboratories	A32
Rudolph Beaver Company	A23
Carl G. Bergmann, D.S.C.	A22
Dr. Brachman Laboratories, Inc.	A31
Bristol-Myers Company	4th Cover
Butler's Chiropody Supply Co.	A29
Campbell Pharmaceutical Co.	A16
Central Orthopedic Laboratory	A27
Dr. A. Dallek	A34
Desitin Chemical Co.	A15
Dome Chemicals, Inc.	A20, A21
Carl F. Fay Estate	A28
Foot Facts Publications	A33
Foot-So-Port Shoe Co.	A1, A2
Foredom Electric Co.	A25
The Griswold Salve Co.	A33
Herbst Shoe Manufacturing Co.	A9
Hoffmann-La Roche, Inc.	A13
Levy & Rappel, Inc.	A25
Liquid Rubber Appliance Laboratory (Iowa)	A30
Liquid Rubber Appliance Laboratory (N. J.)	A26
Maltbie Laboratories	A5
McDowell Manufacturing Co.	A27
Mennen Company	A18
The Mowbray Co.	A23
The NAC Agency, Inc.	A7
Paragon Surgical	A11
Professional Printing Co., Inc.	A28, A33, A34
Wm. Rocke Co., Inc.	A31
Rodoon, Inc.	A3
Franz Sachs	A29
Schering Corporation	3rd Cover
F. P. Stella & Sons Products	A29
Syncardon Corporation of America	A28
U. S. Vitamin Corporation	1st Cover
Westwood Pharmaceuticals	A17
W. Wooley & Co.	A34
American College of Foot Surgeons	A24
Region 8	A30

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MC-J-17-358

When the problem is rheumatic or arthritic pain, MINIT-RUB® brings comfortable relaxation the easy, greaseless way. This counterirritant heat is an excellent adjunct to systemic arthritic therapy.

The week-end enthusiast who sporadically overworks his muscles needs help *fast*. MINIT-RUB brings deep, warming relief.

For colds, MINIT-RUB applied to the chest relieves soreness and congestion; inhaled it reduces stuffiness.

On "footsore" days, a little MINIT-RUB briskly applied to insteps and arches is bracing to tired feet.

Bristol-Myers Co., 19 West 50 Street, N. Y. 20, N. Y.